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PO union to boycott Mercury

by Donald Kennett
POST Office Engineering Union members will be told not to connect any traffic from Mercury Communications' alternative telecommunications network through British Telecom's network or international links.

A circular from POEU secretary Bryan Stanley to all branches has given the call for action. The circular outlines the union's view of what it sees as three potential threats to BT's business: the licensing of the Mercury network; the opening of the market for network attachments and the proposed building of a new wideband cable network.

The union claims to have had some success already in persuading the government to restrict the terms of the Mercury licence, and it says it will continue to do everything possible to prevent or slow down its introduction.

But industrial action could prove counter-productive and should be used as a last resort, the circular warns.

The union says its members should urge BT to compete vigorously to both services and equipment supply by broadening the range and speeding up deliveries. More engineers should be drafted into the new sales force, it adds.

On the wideband cable network, the union argues strongly for a

single integrated telecommunications and cable television network controlled by BT and installed by its members.

It urges BT to start planning this now, and says that BT should be quite capable of funding it by borrowing.

A study on the wideband network proposal is to be published by the union's research department in the next few weeks.

Other members of the British Telecom Union Committee - including the Union of Communications Workers, the Civil and Public Servants Association and the Society of Civil and Public Servants - are opposed to competition to network provision and particularly to what they see as the unfair competition in which BT's ability to invest is restricted by government policy.

BTUC secretary Alan Chamberlain said: "We wouldn't want to discuss our plans. We are waiting for the result of the discussions between Mercury, BT and the government. We will have to make a pragmatic decision when we hear what the terms of interconnection are."

The Association of Technical Scientific and Managerial Staffs, which has its attempts to represent BT staff rebuffed two years ago, is unlikely to become involved in industrial sanctions against Mercury.



SKINNER... British-built micro

British-built micro is aimed at exports

by Robert Parry
LOOKING strongly to the export market, Egham-based Computer Ancillaries has broadened its product range with its own British-built microcomputer. It is called the Calcutt Micro, emphasising the link with the company's existing Calcutt word processing machines.

The 280A-based micro, with 64K to 256K RAM, comes with floppy or hard disc drives built in. The basic twin 400K floppy system starts at £1,700, with a 15Mbyte hard disc version costing the end user less than £4,000,

according to sales director Richard Pierce. CAL specified the system, building on its experience with micro-based word processors, and has it manufactured under licence - by "a decent sized company" says Pierce. It is likely to be the start of a series of microcomputers from the company chaired by Ian Skinner.

"It is on the cards we will go to 16 bits", Pierce adds. Shipments to end users will start by the end of June, selling through CAL's 30 established dealers.

ICL sets strategy for new machines

by Kevin Cahill
ICL this week formally announced the marketing strategy for its new top-end machine from Fujitsu. The company is expected to reveal the first two orders for the IBM-compatible computer system by the end of this month.

ICL is calling the giant machines Atlas 10 and Atlas 25 - recalling the name of the Ferranti range from the mid-Sixties.

Atlas 10 is the Fujitsu 380, with a mips rating of about 15. Atlas 25 is the Facom M382, the twin processor version of the 380 with a mips rating of about 25.

The machines will be sold with an operating system called Atlas OS, a subset of the IBM-compatible Facom OS IV F4. The Facom operating system on which the Atlas OS is based was produced by Fujitsu specifically to counter what that company saw as IBM's attempt to lock in its customer base by "black boxing" the mainframe operating system MVS.

According to Olaf von Bülow, Atlas divisional director, ICL expects to sell five or six of the machines before the end of this year.

Order rate in 1983 is expected to be about one a month. The first two orders for the machines are due to be announced later this month and speculation centres around the Rutherford Laboratory and the Royal Air Force.

Each Atlas machine, complete with peripherals, costs about £3 million, and represents a 15% to 20% improvement on the price

performance of the IBM offering in the 3081 range.

The Atlas range is air-cooled, unlike the IBM machines which are water-cooled. The Atlas 10 and 25 will complement ICL's existing 2900 Series mainframes and can be linked to them in data processing networks, ICL says.

Users see the introduction of the Atlas as paving the way for what ICL calls Batriel, which will fill the gap between the top end of the 2900 range and the Atlas. It is due in 1984/85.

First deliveries of the Atlas machines are due next summer, but earlier delivery looks possible as Fujitsu already has the machine in production at Numazu, outside Tokyo.



VON BÜLOW... ICL will sell five new machines this year

Property problems hinder DP 'take-off'

by Andrew Thomas

LACK of suitable property is hindering the take-off of high technology in the UK. In a survey carried out by Computer Weekly in conjunction with chartered surveyors Herring Son & Daw, and published today, 81% of the computer companies polled cited lack of space as the major factor causing them to look for new premises.

But 64% of these companies ran up against a lack of suitable buildings in all regions of the UK, particularly in the so-called "golden triangle" bounded by Heathrow Airport, Maidenhead and Farnborough.

The concentration of programming skills in this area - Hewlett-Packard comments that it is the greatest in the world - makes it desirable for any high technology company to set up an installation.

A quarter of the firms questioned had also encountered problems in obtaining planning permis-

More survey findings and recommendations - Page 2

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sion for the type of facilities required - namely a mixture of office, light manufacturing, and research and development, in one building and in a location both attractive to the calibre of staff required, and close to air, road and rail links.

There are different priorities for companies of various sizes. In the middle group (25-100 employees), importance of staff availability rises on a weighted basis to 54%, whereas worry about rental costs falls to below 30%. This group would also appear to be the fastest-growing in the poll, with fewer financial concerns than operational worries.

When asked what facilities they looked for in new premises, 39% of all the respondents listed transport facilities as their top priority, closely followed by staff availability (34%). Twelve per cent were concerned with suitable housing for their employees, and 9% were seeking a better environment.

More than half of the companies in the 25-100 employee category declared an interest in moving to a science park development, but less than one-third of the small and large companies considered this type of property desirable.

Only 15% expressed a desire to move to a development area. The most common reason was a reluctance to move away from the areas of the UK traditionally rich in the experienced personnel required.

Property and Technology - The needs of Modern Industry. Copies available free of charge from Herring Son & Daw, 1678 Sackville Street, London W1X 3QL.



PUNTER... Fired a number of salesmen.

Fraud Squad called in at micro house

by Boris Sedacca
INTERNAL strife has hit Microcomputerland, a self-appointed distributor in the UK for the IBM Personal Computer. And New Scotland Yard became involved early this week when its fraud squad was called in to question members of Microcomputerland's staff.

A number of salesmen have been fired by Mick Punter, who took over as managing director of Microcomputerland late last year. Punter had been managing director of troubled software house Zeus Hermes, and was involved in the recent sell-off of the main subsidiaries of that company to the Enterprise group.

The company has purchasing links with Computerland in the US, which is an authorised distributor for IBM's Personal Computer.



New editor

Punter denies the existence of other links including stock ownership, despite claims by sales director Doug Mudie when the company was first launched that it was a subsidiary of Computerland. The problems at Microcomputerland illustrate the volatility of the market for "grey" imports of the IBM Personal Computer, which IBM has refused to announce in the UK despite the demand for it.

Microcomputerland was the first company to announce that it could get around IBM restrictions on exports of the Personal Computer through its links with Computerland, but since then other companies have jumped on the bandwagon.

One of these companies, KGB Micros, has to operate through two middlemen to get supplies. Sandy

Sanderson, managing director of KGB Micros, says that he has approached from people who wanted to become dealers for the machine, but that the margins were too small.

"IBM's margins to its dealers are much lower than those offered by the other micro manufacturers. IBM UK have told me they were not happy about my selling the machine, but they have to ask themselves whether they would prefer the customer to buy an IBM grey import or a machine like the Sirius which is a strong competitor," he said.

Sanderson claims that far from jeopardising his chances of becoming a dealer when the Personal Computer is eventually announced in the UK, IBM is considering favourably his intention to become an official dealer.

CW names new editor

DAVID CRAVER took over as editor of Computer Weekly this week. For the last year he has been with Computer Weekly as an associate editor. Previously he spent four years with a major computer manufacturer, four years as a senior executive with the trade association for the US

paper industry, and two years as staff writer for the authoritative international newsletter Patroleum Intelligence Weekly. Craver was born and educated in the US, where he graduated with a Bachelor of Arts from Trinity College, Connecticut. He is 36, married and has two children.

'System 38 geniuses are scarce'

by Boris Sedacca

IBM has been caught off guard by the publication of a report which criticises its advanced architecture small business machine, the System 38.

The report, System 38 in Practice, was published last week by Xephon, a conference organisation specialising on IBM and its plug-compatible rivals. It precedes a briefing to be held this week by IBM at which four selected System 38 users were invited to relate publicly their experiences with the machine.

Seventeen out of 24 users interviewed by Xephon in the UK reported performance problems with the machine. And some users believe that IBM support staff do not understand their own systems.

Despite these drawbacks, says Xephon, most System 38 users like the machine.

Many of the areas highlighted for criticism by the report have since been improved.

Bob Swanson, group DP manager for Volvo Great Britain, says that good System 38 staff at IBM are light on the ground. "There are very few System 38 geniuses around. My impression is that they generally come from IBM Rochester where they had pre-release involvement with the machine before it was launched."

"Otherwise, I believe systems engineers get similar training to customers but without access to a production system like customers. However, we are extremely satisfied with our experience of the System 38 particularly with programmer productivity."

Michael Bradford, a partner with Hospital Plan Insurance Services, added that the launch of Model 7 has got around the problem of inadequate performance on System 38.

NEWS BRIEF

Barclays in lead at 'DP Olympics'

FIRST heat of the 1982 Computers competition was held at Crawley on Saturday. Winners of the team competition were Barclays International, with ESAMS taking the women's team prize.

Two teams tied for the women's number one spot - Legal & General and NPI; and Butterworth Publishers took the small units honours. A full report will appear in next week's issue.

UK still in race

REPORTS that India is to sign a £90 million contract for CIT Alcatel of France to build a telecommunications factory there do not necessarily mean that the UK has lost its bid to sell System X, according to the export consortium British Telecommunications Systems.

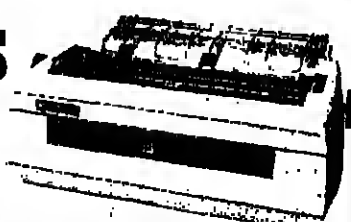
£115,000 grant

BRISTOL-BASED systems house UPS International is to get a £115,000 grant over four years under the Department of Industry software products scheme. The grant will cover 25% of the development costs for UPS' personnel administration package, System 90, which will have its first release in June.

Jobs saved

SERVICE business previously undertaken by Nexos is to be taken over by a new company, Nexel. It will service word processing equipment of the 3,000 customers who bought machines from either Nexos or Ultronic Data Systems (which Nexos bought) nationwide. The formation of the company, by a management buy-out, preserves jobs for 84 former Nexos employees.

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'ICL will break even in first half of 1982'

by Kevin Cahill
ANALYSTS EXPECT ICL to break even, or at most show a small loss, when it reports its six-month trading figures soon.

The consensus is that a loss would be in the region of £5 million to £10 million, or just about break even in the first half trading from October 1981 to March 1982.

ICL is expected to show a trading profit before interest and other charges of up to £13 million. The analysts expect this turnaround on the basis of an order book which is between 15% and 22% higher than the first half last year.

There has been a substantial upswing in user confidence in the company, and a large increase in sales abroad.

But ICL is also thought to have fuelled the increase with aggressive

pricing on the ME29, which has now sold nearly 2,000 units, and on the DRS and System 25.

The company has held its prices on the 2966, which is now approaching sales of 300 a year, and is on schedule for next year's target deliveries of 360 machines.

ICL has recruited additional staff at two of its factories as a result of the increased orders. The shares rose about 10p last week as the predictions hit the market, and several financial institutions have taken up big tranches of ICL shares, in some cases as many as nine million shares.

The return of financial confidence in the company is widely attributed to the close contact maintained between ICL and the City.

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US software giant makes its micro debut

by Maggie McLenig
MAJOR US software house ADR is to make its debut in microcomputer software. It will develop products for the Professional series recently announced by Digital Equipment.
Previously, ADR has concentrated on software for IBM mainframes, although the Applications Products Group has had a long-standing relationship with DEC in the US.
ADR is one of a number of big mainframe software houses which has fallen to the lure of micro.
"The fact that this is a joint venture means that it is really a natural progression for the Applications Products Group, because they have been working with DEC for some years," commented Nick Pollard, UK director of ADR.

Initially four products will be launched, one of which is a scaled-down version of ADR's Empire financial modelling system currently running on DEC VAX machines. This is to be known as the Empire workstation, and Pollard expects it to be used for connecting to a host VAX machine.
"In the past we have steered clear of micros as micros, and this policy will not change," he explained. "We are more interested in them as intelligent workstations, particularly with respect to word processing, because you can place some user friendliness in them, backed up by mainframe processing."
The three other products to be developed for release at the end of the year are ADR Data, for data management and manipulation using English language commands; ADR Graphics, a colour graphics package; and ADR Stats, for statistical analysis and forecasting.
Prices have yet to be announced, but Pollard confirmed that they will be within the normal bracket.
As a second stage, ADR is also looking at the IBM Personal Computer as another intelligent workstation for front-end processing. It could readily link with the bulk of ADR's current mainframe software, and forge further paths into the new market.
"The real difference for us is getting into the numbers game," explained Pollard, adding that he expected up to 100,000 units of the software would be sold during its first year.



POLLARD . . . "A natural progression."

European Commission plans legal database

by Donald Kennett
A COMPUTER database which can be accessed by all Common Market traders is being planned by the European Commission. It would cover EEC regulations, laws and court judgments.
A call for tenders for a study on the feasibility of the project has been issued by the Commission.
Proposals from software houses, management consultancies or information providers with specialised legal and trading expertise are asked to arrive by mid-September. Up to £140,000 is budgeted, with the work to be completed by April 1984.
Meanwhile, the London Chamber of Commerce and Industry has set up a database of export opportunities for UK companies. It includes calls for tender from the EEC, which can be worth £5 million a day and require bids within six days. The database, called Europort, is available on the Odyssey private videodata system run by NVA Consultants on an ICL ME29. It can be accessed via 24 ports on the public telephone network by the 7,000 members of the LCCI, as well as 12 other UK chambers of commerce.



TAYLOR . . . "US deal soon."

Nixdorf to sell UK voice system

by Philip Hunter
THE lead in office systems taken by UK company Office Technology Ltd with its introduction last year of spoken editing of text, is being consolidated. It is passing responsibility for marketing and development of the product in Europe to Nixdorf.
The agreement between the two companies concerns Imp, Information Management Processor, which OTL released last autumn with a facility for vocal annotation of text.
Other companies, such as Nexos, Dainpoint and Nixdorf itself, had for some time been working on office systems strategies based on voice, but OTL tipped them at the post.
The licensing agreement allows Nixdorf to develop Imp to European specifications.
OTL managing director Spud Taylor said he expected to announce soon a deal similar to the Nixdorf one in the US.

Premises hard to find for electronics firms

by Andrew Thomas
THERE is an inability to understand that electronics companies (a) exist, and (b) do not want warehouses with 10% office accommodation, even in the Thames Valley. So commented one Reading-based computer company in replying to the Computer Weekly-Herring, Son & Daw property survey, published today.
"They always prefer to build warehouses with minimal office space and high ceilings, unsuitable for the electronics industry," was another typical reply.
The survey was commissioned to find out who "they" are and why they are unable to understand the need of high technology companies.
Two main problems were encountered by the 300 computer companies polled. The first is the conservative and outdated thinking of property developers and financiers, who are either unaware of the needs of today's industry, or are unwilling to take what they see as a risky step, and build anything other than the warehouse accommodation which is seen as a reliable route to profit.
The second stumbling-block preventing the expansion of companies is the Town and Country Planning (Use Classes) Order 1972. Differing little from its 1950 predecessor, it outlines the type of use to which industrial premises may be put.
The categories listed reflect the type of industry prevalent 30 years ago and, as such, exclude any reference to the high technology industries of today.
The computer industry needs a mixture of very light, clean manufacturing, research and development, and office accommodation, the survey says. With the current use classes, as soon as any manufacturing activity is entered, the premises become "industrial", meaning a restriction to industrial estates where the buildings typically have high ceilings, poor communications, and are environmentally unattractive from the viewpoint of pollution from neighbouring factories.
The view was also expressed that the type of premises prevalent on industrial estates often discouraged the type of staff which the companies were trying to recruit.
Leases were also cited as posing problems by a number of firms. "Leases are too long for our industry," wrote one company. "The volatile nature of the technology and market requires constant change from us, and a 25-year lease places a cumbersome noose around our necks. We would be prepared to pay a premium rent for a shorter lease, say three to five years."
In its recommendations, the report says that a new use class should be introduced, to cater for a combination of office, research and development, light industrial and wholesale warehouse uses where none of these exceeds 50% of the whole.
Both universities and established industries have land which is in excess of their requirements. The report recommends that, in many cases, such establishments could be in a position to develop small, high technology estates.

NEWS BRIEF

Six new mainframes from NCR

NCR has released new medium and large scale mainframes, V-8500 Group II systems, offering price/performance ratio up to 25% higher than the V-8500M and MP processors they replace. Six models extend V-8500 performance range higher and lower than the current offerings.
The systems run under NCR's VRX (virtual resource executive) operating system.

£4m Philips deal

THE Dutch government has signed a contract with Philips to develop equipment and software for three office automation projects based on Philips' digital optical recording system. The systems will be used to handle and file mail, tax administration, and lead and property data. Government departments will contribute Gld 9.5 million (£2 million) and Philips Gld 10 million (£2.1 million).

Marketing rights

COMPUTER Technology Ltd of Hemel Hempstead has signed an agreement with TRW, the Los Angeles-based corporation recently granted worldwide marketing rights for Convergent Technologies' networking workstations, giving CTL exclusive marketing rights in the UK and Ireland. CTL will also gain access to proprietary system software provided by TRW for the Convergent products.

Ways into Japan

THE British Overseas Trade Board has updated its booklet Investment and Licensing in Japan. First published in 1973, it guides British companies into the Japanese market in other ways than by direct export, covering technological agreements, foreign investment and joint ventures. It is free from the BOTB.

Earnings slip

PRE-TAX earnings for the BASF Group slumped by 38% for the first quarter of 1982, down to Dm276 million (£64 million) from 1981 first quarter's Dm446 million (£104 million) on sales up 2.3%. Weakness in earnings by North American affiliates and a persistently unsatisfactory situation in commodity plastics were among principal reasons given for the fall.

CAD up 96%

LEADING CAD/CAM systems supplier Intergraph has reported net income of \$2.5 million for the first quarter of 1982, up 96% on the same quarter in 1981.

Pressure builds on IBM to fill mainframe gap

by Kevin Pearson
PRESSURE is mounting on IBM to launch a machine to fill the gap between its small and medium-scale mainframes. Last week BASF Computers launched its 7/68 machine based on Hitachi's M240H and National Advanced Systems has promised a similar product soon.
The 7/68 is rated at 2.5 million instructions per second (mips), compared to the 4341-2's 1.5 mips. Industry analysts in the US predict that IBM will shortly follow suit with a machine topping out the 4300 range, though there are two options available to it. It could launch a more powerful version of the existing machines, "a 4351" according to Peter Labé, of New York market analysts Smith, Barney, Harris, Upham.
The other alternative, says Labé, is an attached processor version of the 4341, which would also offer about 2.5 mips.
The BASF machine is a more powerful version of the 7/65 processor launched earlier this year. The 7/65 is field upgradeable to the larger machine.
The new machine is available with eight channels, six of which support data streaming, necessary for the latest peripherals like IBM's 3370 disc drives. The 4341 has only two data streaming channels. Both machines can have up to 16 Mbytes of main memory.
National Advanced Systems is expected to launch its version of the M240H soon. NAS's machine will also be rated at 2.5 mips, but will have up to 16 channels.
An important element of the BASF announcement is the intention to support MVS/Extended Architecture (MVS/XA) IBM's large machine operating system on a 2.5 mips machine.
Nick Hollis, divisional manager of BASF's computer division, said he could not put a date on availability since IBM does not start deliveries of MVS/XA until 1983.



HOLLIS . . . No date on availability.

'France needs 500,000 microelectronics staff by end of decade'

by Jack Gee
THE French microelectronics industry will have a shortage of half a million staff by 1990 if the current rate of training is not speeded up.
And while the French domestic market is expected to double in size by the end of the decade, production in the electronics industry must increase two-and-a-half times if it is to be raised to an "international level".
These are two of the conclusions of the report by the special Electronics Channel Commission which the government set up to obtain guidelines for its ambitious five-year microelectronics plan. Details will be announced later this summer.
Abel Farnoux, former head of the European videocomputer manufacturing venture for TV tubes, headed the Commission which calls for urgent efforts to catch up with foreign rivals in computers, components and automatic equipment for use in offices and the mass consumer market.
The report, the first to embrace all aspects of France's electronics industry, says that the domestic market will double by the end of the decade. "To raise French electronics to an international level, production must be multiplied by two-and-a-half."
The Farnoux Commission stresses that all sectors of the electronics industry are interdependent and urges the government to adopt a joint strategy to co-ordinate research, and international co-operation.
Training must be a top priority. France is presently producing only 7,000 computer and electronics engineers and 18,000 technicians a year. Twelve thousand, including 10,000 technicians, must be trained over the next 30 months, the report says.
The Commission urges the government to set up a Ministry for Electronics to co-ordinate all these efforts.
Welcoming the Farnoux report, Jean-Pierre Chevènement, Minister for Research and Technology, said: "New solutions must be introduced not only in preparing new workers for the industry but in providing continuous training throughout their careers."

IEE, polytechnic start CAD/CAM projects

by Robert Parry
GOVERNMENT schemes to persuade British industry to use computer-aided design and manufacture techniques are beginning to take off. A data service for computer-aided engineering is being set up by the Institution of Electrical Engineers, and at the same time the IEE is funding a project at Teesside Polytechnic to establish how training courses can benefit users of CAD/CAM.
The CAD data service will be run from the IEE library. It will provide information to support the Department of Industry CAD/CAM and CADMAT schemes, from which it will derive its £500,000 funding over three years. The IEE database will include equipment information and a register of expertise, as well as an index of journals, books and conference proceedings in the relevant subject areas.
Software information will be provided in conjunction with the National Computing Centre in Manchester, to include NCC engineering software packages from the clearing house it is setting up under a contract from the Mechanical Engineering and Machine Tools Requirements Board.
The IEE's aim is that the data service should be a first step, leading people on to consultants or other specific sources of advice. Janet Tomlinson, information manager at the IEE and in charge of the service, reckons the database will be going in another six months, and is expecting anything between 3,000 and 10,000 enquiries a year.
As well as running the CAD data service, the IEE manages the CADMAT (computer-aided design, management and test) project for the DoI, and supports the Institution of Mechanical Engineers in running the CAD/CAM project. These two schemes will have £9 million and £6 million respectively of government money.
The Teesside Polytechnic project is funded by the EEC to the tune of £50,000. At the end of this month a re-training course for 12 qualified but unemployed engineers in CAD/CAM techniques will finish at the polytechnic. The re-trained engineers will be monitored until the pilot project ends in September to see how the course has benefited them and the companies they work for, if they find jobs.



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Burroughs sells 1,600 B20s before launch

by Robert Parry
BACKING up its intention to reassert dominance in the small systems market, Burroughs disclosed that it had sold 600 of its micro-based B20 range in Europe by the time of the official launch last week. Most sales have been to established computer users, although about half are new users for Burroughs.

Some 1,000 systems have been sold in the US.
The first sales will set the trend for the company's main marketing efforts. Burroughs will play on the theme that the B20 is a proven product, with established hardware and stable software. It will be available in the UK next month.

Hardware for the 16-bit B20 range, based on Intel processors, comes from California-based Convergent Technologies. The hardware already appears in other guides — such as a word processor from NCR. Burroughs has 85% of

Coovergent's output, a seat on the board since signing the OEM deal last October, and manufacturing rights for the machines, which it is likely to exercise to gain the security of a second hardware source.

The two initial models in the range, B21 and B22, are aimed very much at distributed computing applications in large companies. The B21-based B21 comes in at less than £7,000 for an integrated unit with 256K RAM and five megabytes hard disc drive with floppy back-up. For a system with three more workstations and 384K RAM, the price will work out to about £4,000 per workstation.

The B22, using the 8085 processor, offers more RAM and mass storage memory along with increased display facilities and a Multibus slot added to the standard RS232, RS422 and Centronics printer interfaces.

Software is based around Burroughs' own B20S operating system, which will look familiar to



POSNETT (left) and RUSHTON... Looking to a new direction for Burroughs.

users of larger Burroughs machines, says Charles Posnett, marketing manager.

With the B20 range, and the OFIS electronic office system which will be able to use the

microcomputer as a terminal, Burroughs sees itself moving out of the "computer business" and into the "information industry" says UK managing director Laurie Rushton.

Burroughs will open a Computer Business Centre in London around September, when the CP/M operating system should be available on the machine, says Posnett.

SALES BRIEF

Oxfordshire invests in the DRS-20

OXFORDSHIRE County Council has ordered ICL DRS-20 networking microcomputers worth £350,000 to provide both local computing facilities and teleprocessing from sites throughout the county.

Over 50 Model 10 workstations are included in the order, as well as a number of Model 40s and 50s — the floppy and hard disc based models. They will run previously developed applications in Basic and CISC Cobol, as well as according to ICL 2972, 2903 and 2904 mainframes and minis in various council departments.

£1m orders

COMPUTER Technology has won the fifth major order for its Momentum non-stop dual processor based system, bringing the total value of the orders to well over £1 million. The latest order has come from electrical wholesalers Whitworth Electric, which will use it with 75 terminals in its 11 branches to process orders, check credit and produce picking lists and despatch notes.

First UK sale

DATAPOINT has made the first UK sale of its top-of-range 8800 mini to Chorley-based Leyland Paint & Wallpaper to provide invoicing, sales accounting and stock evaluation facilities on its existing Datapoint ARC local network. Costing £109,000, the 8800 has 500 Kbytes of RAM and 20 Mbytes of disc storage.

Banking on Philips

PHILIPS has won a second major order for P78575 300-character-per-second printers from the Royal Bank of Scotland. The order, worth £1.64 million, is for 600 back office printers to log all the branch accounting transactions carried out on the IBM 3600 branch automation system which is currently being installed in its 500 branches.

500 printers

ESHER-BASED printer supplier Northamber has ordered 500 Mannesmann Tally MT100 series printers, which are aimed at microcomputer and small system users. Most of the 500 will be 80-column 160 character-per-second devices, but 132-column and 100-chips models will be included.

Building up

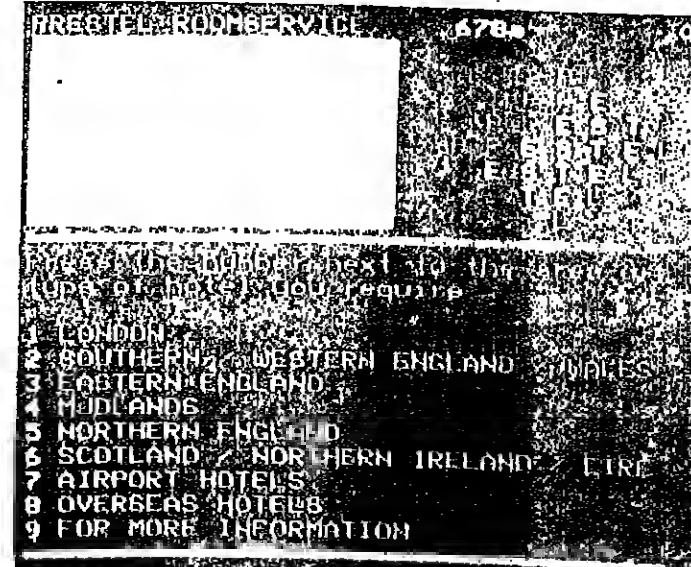
NIXDORF has gained the first building society order for its 8864 distributed terminal system. West Bromwich Building Society is to install systems in five branches initially and another 20 within a year to support enquiries from its mainframe.

Serck success

COVENTRY-BASED Serck Controls has won six orders, totalling over £5 million, in the last four months. One of them, worth £1 million, is a hierarchy of 10 minis and micros to control a Shell gas processing plant in Scotland. The others are for a Denham, Oman and the USSR — for various control and telemetry applications both onshore and offshore.

DHSS system

SALFORD Health Authority is installing the WHIS (Workload Information and Health Information System) developed by the Department of Health and Social Security. The based ABS Computers. The system will run on an ABS 486 mini, producing energy management and job scheduling information. It will be used by the authority's medical and administrative staff.



Prestel's Roomservice allows users to look up hotels by their location.

Prestel launches hotel booking service

by Donald Kenett

PRESTEL is fulfilling its promise to make the service easier to use, and to provide more industry specific applications. A new hotel booking service has been launched with a master index which allows users to look up hotels by their location.

The booking pages themselves will continue to be set up by information providers, which include large hotel groups, travel companies or publishing houses, but the difficulties of working out how to find them have been overcome.

Prestel itself is providing the index, called Roomservice, and is backing it with a printed directory to be sent twice a year to all Prestel users. It is also making the service more available to small hotels by offering a minimum insertion of two pages — an amenities page and a booking page — for £50 a year.

The new index is the first manifestation of the policy devised at the viewdata and teletext "commitment conference" organised by the Department of Industry in February, where the need was stressed to re-think industry activities so as to meet users' requirements.

In the last six weeks the number of hotels bookable through Prestel has jumped from 400 to 1,000, and the level of bookings is running at 400 to 500 a week. Several large chains have joined the service, but the arrangements for small hotels are expected to contribute to a continued steady growth.

Hotels can be booked in the UK, Europe, the US, Canada, the West Indies and Mauritius.

To help prepare its attack on the residential market, Prestel has retained the new product development agency Claverton Lodge & Knight which specialises in fast-moving consumer goods.

Tandem aims at office systems market

ELECTRONIC mail and facsimile transmission are to be supported by non-stop mini manufacturer Tandem Computers in a bid to tap the office systems market.

A new transfer software module has been designed to form the core of a new set of information "delivery mechanisms," of which electronic mail and facsimile transmission are the first two.

Transfer, costing £7,200 and available in April 1983, will support a range of protocol conversion operations which will enable third party equipment makers and systems houses to implement links to Tandem-based fault tolerant networks. Existing converters, such as those that support IBM terminals, can be used with the

Transfer software.

Tandem's distributed processing networks are built on the "backbone" of its Expand networking software, which can link up to 255 geographical locations to a fault tolerant network. "Transaction management," provided by its Ecompass teleprocessing and report writing products, and "gateways" provided by Transfer and its add-on modules, are the other elements of what it calls its "corporate information resource."

Linked with Transfer are £9,300 facsimile controllers and £1,400 TransferFax software, which allow users to integrate CCITT Group I and II (six minute and three minute) facsimile transceivers into their networks.

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'British standardisation efforts doomed to failure' — report

US bid to take over viewdata, teletext

by Donald Kenett

THE US is attempting to adopt viewdata and teletext as its own, at the same time rejecting the pioneering UK efforts.

The evidence comes from three sources. The American National Standards Committee has set up a working group on viewdata and teletext character sets; American Telephone and Telegraph continues to be obstructive in international discussions on standards; and a US market research company has published two recent reports attacking British standardisation efforts.

The attacks came from Connecticut-based International Resource Development, which has criticised the British Teletext Industry Group's submission to the Federal Communications Commission and said that any pre-planned national public viewdata service such as Prestel was doomed to failure.

The attacks were based on the relative simplicity of the current UK teletext and viewdata services.

They ignore that methods of enhancing these services with line graphics and photographic images have been agreed in outline by broadcasters and telecommunications interests in the UK and in CCITT (the Consultative Committee on International Telegraphy and Telephony).

The US and Canada are members of this body, but are possibly too used to seeing initiatives in telecommunications come from North America to be able to adapt readily to one coming from Europe.

A by-product of AT&T's disruptive contribution to the standardisation of viewdata in May last year was to draw attention to the International Standards Organisation's seven-layer model for Open Systems Interconnection (OSI). Until then it had not figured in the rivalry between the UK, France and Canada because it had not been proposed when they designed their systems. The model is still incomplete, but appeals to use it in

the development of live systems are increasing.

Viewdata users are prime candidates, since the basic concept of viewdata is to allow easy access to a wide range of information services by a large number of users, using common equipment and procedures.

Presentation Layer, the second layer of the model, which describes the character sets, formats and display attributes that a terminal should be capable of handling and the codes that should be used in communicating them, has now been taken up by the American National Standards Committee X3L2.1. It expects to complete a draft standard in conjunction with the Canadian Standards Association at their next joint meeting in June.

The committee emphasises that the participants are technicians, people, and political speeches will have no place at their meetings.

* Videotex Business Applications Markets, £1,285, 136pp, and Videotext Newsletter, International Resource Development.

CDC asks for unpaid holidays

by Howard Karten

CONTROL Data Corporation, the latest company to be hit by the US recession, last week asked employees to volunteer for time off without pay. The Minneapolis mainframe manufacturer is seeking some 700 volunteers among its 48,000 domestic workforce to take unpaid holidays ranging from 60 to 90 days.

A CDC spokesman said other options, including the possibility of lay-offs if too few volunteer, were being considered. The last time CDC laid off employees was during the 1974 recession.

There are no plans to extend the voluntary programme.

CDC reported a first quarter profit after tax of \$31.1 million, compared with \$46.4 million in the quarter ending March 1981.

CDC announced last week that it was shutting its 13 Magnetic Peripherals Inc plants for four to 12 days during the summer, to take inventory. MPT's 9,500 employees will be asked to take their vacations during that time. The move was attributed to a slowdown in orders.



ROBINSON... "Strength in documentary credit facilities".

International banking move by GCS

by Boris Sedacca
GENERAL Computer Systems, whose directors recently bought out the controlling stake in the company previously held by the US-based Telex Corp has acted swiftly to maintain its market momentum by moving into international banking. It has launched a system with strong word processing facilities for international documentary credit operations in banks.

Competitors in the market for international banking systems currently include software houses like Arbat, Hoskyns, BIS, and Aitargo, as well as the traditional hardware manufacturers such as Burroughs, NCR and Nixdorf.

No system covers every aspect of international banking operations and according to marketing director, Peter Robinson, GCS sees its competitive strength in banks which have a high volume requirement for documentary credit facilities.

The company's GCS 222 international banking system is based on hardware from Qantel.

GCS is hoping to get an early UK reference site with the Midland International, which Robinson claims is at an advanced stage of evaluation on the product.

UK micro makers into 16-bit systems

by Robert Parry

UK MICROCOMPUTER manufacturers have been quick to make the move into the 16-bit arena. Following the increasingly well-trodden path to high-performance business micros, Britannia Computers of Dudley has taken Motorola's 68000 processor running a Unix-like operating system to provide flexible microcomputer systems to meet customers' price and performance criteria.

The Britannia Series 3 joins several recent arrivals like the American Fortune 3216 and the Charles River Universe 68 machines, and the British IMP 68, all of which are pitching for a significant market share.

Britannia's machine is based on the IBBE 696 (\$100) bus, giving flexibility in original configuration and field upgradeability. Systems run from single user, five-megabyte hard disc storage units for less

than £6,000 to 16-user systems with 140 megabytes of disc. Up to 18 RAM boards, giving eight megabytes of internal memory, can be fitted.

Sales and marketing director Geoffrey Sheridan says that Britannia is thinking of expanding the multi-user capability to 70 or 80 screens off one processor, and that the system will have Ethernet local networking capability.

"With Ethernet you could go up to 1,600 users on linked systems," says Sheridan, "if you'd want to." The networking hardware is available, but Britannia is still involved in producing the software to implement it.

The operating system for the machine is Idris, the derivative of Unix from Whitesmiths, a choice arising out of what Sheridan sees as the necessity for multitasking and multi-user operation.

Opportunities for new DP firms 'never better'

by Boris Sedacca

OPPORTUNITIES for new computer companies to come on the market with competitive products have never been better.

Start-up companies wishing to build small computers can choose from competing ready-made architectures, and have many advantages over their predecessors of a decade ago.

But this "window of opportunity" will be closing by the mid-1980s, warns William Zachmann, director of research at International Data Corporation's US headquarters.

Speaking at IDC's 1982 European Computer Industry Briefing Session last week, Zachmann said that new companies could come into the market with low capital investments and build a computer out of a basic "tool-kit". Such tool-kits comprise off-the-shelf semiconductor logic and

memory, bus structures, disc storage and peripherals, modems and software from which systems builders configure systems cheaply.

"There will be new companies which start up and carve up substantial market shares. On the other hand there will also be companies which start up but eventually get pushed aside."

"Dramatic changes in system architecture are waiting in the wings. By the end of the decade we will be looking at totally different architectures," he said.

Zachmann contrasted the architecture of the 32-bit Intel iAPX 432 microprocessor three-chip set against that of IBM's top-end mainframe, the 3081. Although the iAPX 432 had only 16 Mbytes of real memory against 32 Mbytes on the 3081, it could address one million megabytes of memory against 2,000 on the 3081.

Data Type sets up US operation

by Sarah Hardcastle

DATA TYPE, the South Wales microcomputer and peripherals company, has established a US operation to manufacture and market its graphics products. This is Data Type's latest phase in a programme of planned expansion, made possible by substantial funding last November from Citicorp Development Capital's high technology finance scheme.

The US subsidiary in Mountain View, California will manufacture graphics boards for Data Type's Autograph range based on the Televideo terminal. The boards convert the Televideo into graphics terminals compatible with the Televideo 900 series.

A distribution network for the Autograph range and subsequent graphics products is being established.

Avery Blake, former vice-president of MQI Computer Products has been appointed president of the subsidiary. MQI until recently manufactured Data Type's graphics boards in the US.

Gerry Tufts, chairman and managing director of the Data Type group said: "We feel that there is a considerable market for our computer graphics products in the US and to build on our initial success we had to have our own local operation."

Setting up the US operation will absorb the remainder of Citicorp's £400,000 funding originally awarded for research and development. Data Type has directed a large portion of this sum towards a planned series of European acquisitions designed to extend its marketing outlets on the Continent. It bought German

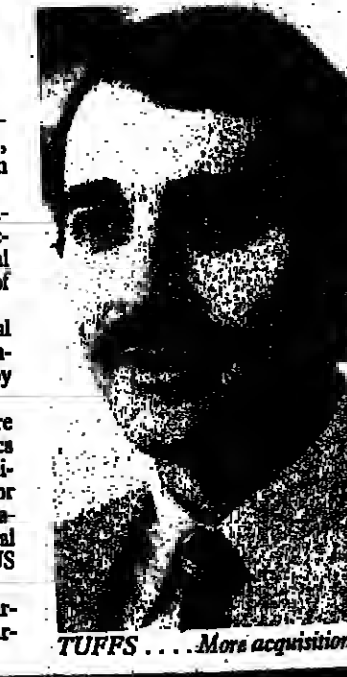
OEM terminal supplier Teledynamics for £500,000 in January, and has two further acquisitions in the pipeline.

Acquisitions for a Dutch company are still in progress while acquisition of a Swiss terminal supplier is within two weeks of completion, said Tufts.

With the option of additional finance from Citicorp, Tufts anticipates one more acquisition by next year.

Further graphics products are planned, with a low-cost graphics range, offering colour for the business user and high resolution for engineering and scientific applications to be released at the National Computer Conference in the US this summer.

A terminal with an Arabic character set for the Middle East market is also under development.



TUFTS... More acquisitions.

Summit conference shop window for French viewdata

by Jack Gae

FRANCE is seizing the opportunity of the Western Economic Summit at Versailles to demonstrate the potential of its computer terminals and viewdata equipment.

Diplomats and journalists attending the meeting from June 4 to 6 will operate interactive Teletel and the broadcast Antiope system. They will be linked by a network of 250 terminals at the Versailles Palace and hotels

throughout the Paris area.

The French government has put a team of 30 to work since January to ensure that the summit of the 24 member countries of the Organisation for Economic Co-operation and Development is an original shop window for France's teletext products.

Over 100 technicians will supervise and maintain the computers and other equipment. Teletel will provide access to a number of databanks including

facts and figures on the countries taking part in the meeting. An electronic telephone directory will supply the numbers of all delegates attending.

Mrs. Thatcher and other heads of state will be able to consult their delegations over the computer network and use facsimile machines as an electronic mailing system.

Antiope will offer a 60-page "summit newspaper" in English and French, edited by six full-time journalists. The newspaper will in-

clude world Press reviews, official announcements and weather forecasts.

On Teletel 8,000 pages of information can be accessed in both languages. Alain Rey, a senior organiser of the Versailles viewdata venture, said: "The most exciting aspect is that Teletel, Antiope and electronic mailing are being used together for the first time at an international conference."

Versailles is closely involved in a

local community test for Teletel now under way in the Southern Paris suburbs. Based in neighbouring Velizy, the experiment involves 2,200 homes where interactive terminals have been installed by the French Telecommunications Authority.

French Telecom makes no secret of the fact that it regards its operating display of teletext equipment for the leaders of the Western world as an important conquest now being made.

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Late launch by Grundy for 'briefcase' micro with expanded memory

by Robert Parry
AFTER two years of false starts, the NewBrain microcomputer is ready for the crowded desks and briefcases of the modern businessman. Business, scientific, and educational markets will be Grundy Business Systems' main target.

The company sees the small size and large capability of NewBrain as a winning combination.

NewBrain packs a Z80A processor with 32K of RAM and 29K ROM into a box not much bigger than its typewriter-style keyboard. The first models offer a built-in 16-character display. Expansion units, which can be clipped on to the bottom of the NewBrain, allow memory to be increased to two Mbytes.

The NewBrain uses power switching techniques rather than expensive CMOS, and the resulting low power consumption enables it to run on a battery-driven portable computer. Add-on battery modules will be available from the summer, and a model with built-in rechargeable batteries will follow.

It will preserve memory for up to 20 hours, making the machine useful for taking programs from place to place.

The basic NewBrain starts out costing about £200, but by the time it is built up into what marketing manager Andy Surtees sees as a typical business user's system — display model with added video monitor, printer and one Mbyte floppy drive — it finally costs about

£1,500. Initial sales will be direct from Grundy by mail order, but Surtees plans to have a dealer network of about 50 outlets by July.

The machine comes with its own operating system, built up from hardware independent modules as far as possible and a Basic compiler. It will also run CP/M, giving it an opening to application software, and it will be supplied with application packages in ROM.

The first of the ROM packages available in the next few months, will offer statistics and text processing. The battery machine is expected to enhance the potential for these packages.

NewBrain started life with Newbury Laboratories, and was once in line for the BBC computer education series.



SURTEES... NewBrain dealer network of 50 by July.

NEWS BRIEF

Life policy quotations on viewdata

LIFE assurance quotations via viewdata TV sets are possible with Frenet, developed by Friends' Provident and Rediffusion Computers. The viewdata TVs, connected through the telephone network, emit are terminals to Friends' Provident's Gladis IBM 3033 computer system, allowing instant quotations to brokers.

A Rediffusion R1800/50 with viewdata software in Dorking has been running the system experimentally since February for local brokers.

Telecom show

A PERMANENT exhibition of UK telecommunications history, with mock-ups of possible future systems, has opened in London. It is being run by British Telecom in an annex to Baynard House, the centre of the new City Overlay digital network and the home of the first System X exchange. It is open from 10.00 to 4.30 Monday to Thursday each week and admission is free.

Teletex study

TELETEXT transmission using all 625 lines of a TV channel instead of four to eight lines, is to be studied by UK consultancy Logica and General Systems, an Italian informatics company. The project, backed by the EEC data processing support scheme, will look at two-way teletext and higher level teletext giving photographic quality pictures as well as the feasibility of full channel bandwidth systems.

Cork branch

FOUR Phase Systems of California, acquired by Motorola last March, has begun operations in Cork aimed at getting more sales in the European market. A start-up staff of eight is engaged on a number of projects for development in the office automation market, following a period in training in the Cupertino headquarters in California.

Workstation

CTL has added a low-end workstation to its range of Convergent Technology desk-top computers. The AWS family is built around the Intel 8088 16-bit microprocessor with up to 512 Kbytes of RAM and floppy or Winchester mass storage. Prices run from £3,000 to £8,000.

Branching out

WIDENING its options, business software specialist TABS now has its range of accounting packages up and running on the Sinus 16-bit micro and the IBM Personal Computer, as well as the CompuLink, NEC PC 8000, Xerox 820 and Sharp PC 3201.

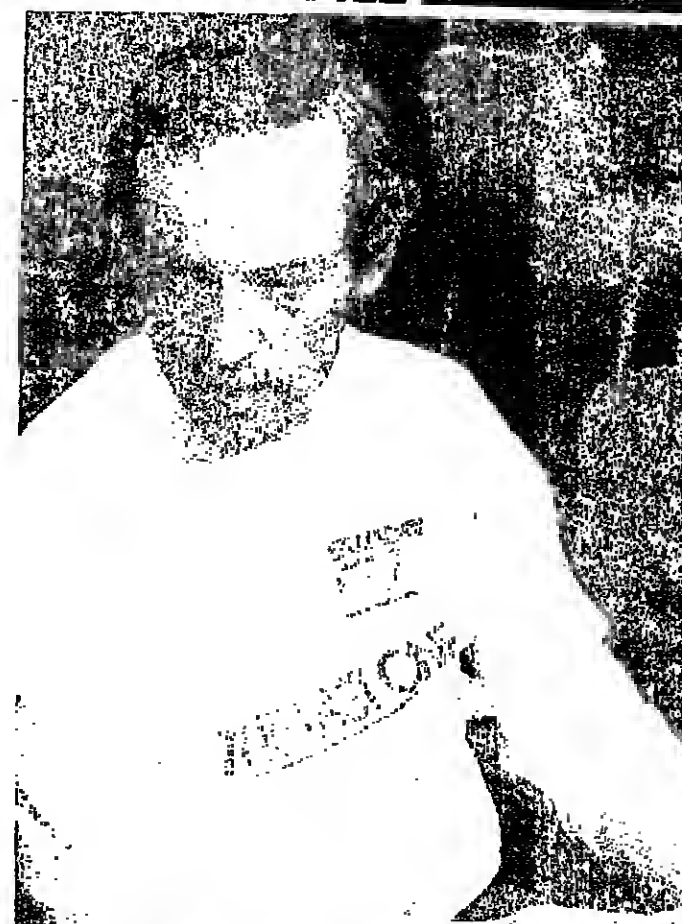
Robot aid

OVER the last year there have been 97 firm applications for assistance under the government's robot support scheme. Kenneth Baker, Minister for Information Technology, has told Gary Waller, Conservative MP for Brighton and Hove, that the scheme is working well. In addition, the Production Engineering Research Association has undertaken 54 robot consultancy studies, he revealed.

For car dealers

A VEHICLE sales administration system aimed at Ford main dealers has been launched by Source Systems of Southampton. Called Systems of Southampton, Autosoft, it runs on DEC minicomputers and is designed to handle orders to delivery, tax documents, invoices, payments to station, and vehicle availability. It has a cash-on-hand facility. It has already been installed in 10 branches in the South West.

SOFTWARE FILE



JAMES... Gaining respectability for The Last One.

Now NCC 'adopts' The Last One

CONTROVERSIAL program generator The Last One has gained a stamp of respectability through being sold by the Microsystems Centre Division of the National Computing Centre.

Launched in a blaze of publicity last year, The Last One was subject to delays in supply which led to doubts about its actual existence. Claims by the author, David James, that it would be the last program a user would ever have to buy were said by the few users who did have a copy to be exaggerated, and the software was not completely bug-free.

Now the NCC has adopted it, and will be running a course in June for non-DP Professionals, to provide them with "hands-on" experience of the package. Towards this end, Colin Harris, senior consultant in the Microsystems Centre, has been testing it for the last three months.

"I wouldn't claim to have tested The Last One to destruction, but

obviously we're reasonably happy or we wouldn't be doing this," he said.

According to Harris, the NCC is not claiming that the package is now free of all bugs, because "not enough time has really been given to establish that. However, you could go on waiting for ever for a package of this type and price if you said that."

He also pointed out that the designer of the system, DJ "AJ" Systems, has not been advertising The Last One for some time, and has been busy perfecting the software instead.

The type of applications Harris envisages for The Last One are small updating systems, largely database oriented, such as a convertible currency application.

It is not the only microcomputer package that may be taken under the NCC's wing. "We are only doing two or three trial courses to start with, and are looking to other products as well to do the same sort of thing," confirmed Harris.

Self-teach Cobol on a microcomputer

MOST Cobol programmers in the industry today probably received their initial training without sight of or contact with a computer. After days of ploughing through theory and manuals, the first treasure bundle of coding sheets would have been sent off for punching, then returned having miraculously become a program. About as true to life as Dalgarno.

A newly-formed software house called Microcal, based in Windsor, is aiming to change all that, and has launched an interactive CIS Cobol training package for running on a microcomputer.

Jon Shearing, one half of the partnership that runs Microcal, used to be a lecturer at ICL's training centre at Beaumont.

"The course is aimed at a person with computing aptitude, and takes them from the very basics, with little knowledge, through the design and writing of their own system," he explained.

To allow potential customers to evaluate the software before committing themselves to paying the full cost, the course has been divided into two parts. The first is called an assessment pack and costs £35. This takes the student through the rudiments of Cobol, to the production of an initial program, and includes an introduction to information processing in a business environment. The price of the completion section is a further £315.

"The course is slanted towards business applications, and uses personnel and stock control systems as examples," said Shearing.

by Maggie McLening

Software houses ready to make a killing on payroll packages

WHILE microcomputers have been busy monopolising the accounting and stock control system market, payroll has been one area in which they have hardly excelled. The quantity and complexity of calculations involved in the most elementary payroll system were sufficient to bring most machines to their knees.

Ensuing recomputations might well have had a similar effect on staff relationships, so the management of small and medium-sized organisations can hardly be blamed for playing a waiting game, until developments in micro hard discs provided the capacity to cope at the right price.

The current proliferation of payroll packages on the market seems to indicate that the axial point between rising technology and falling hardware costs has at last arrived, and the smaller software houses are getting out to

make a killing.

One of the lowest priced packages is the Jarman Payroll and Personnel Records System, developed by Tring-based Jarman Systems, which costs £490. Written in Pascal, it caters for up to 300 staff if running on an Apple II, and with unlimited numbers if used on an Apple III with hard disc, according to Jarman Systems.

Also in the lower price bracket is Powerpay, recently introduced by Omicron Management Software, which operates on any 8-bit or 16-bit micro running under the CP/M operating system.

Costing £700, Powerpay will take up to 9,999 employees, and runs at an average speed of 30 employees processed per minute.

For companies with specialist requirements, such as irregular hour-working, or casual labour, there are also low-priced packages. Brentford-based DLA Computers

is offering Payroll-Plus, a system particularly aimed at companies in the security business, for £600.

Payroll-Plus is designed for the 16-bit micro running under CP/M or CP/M86, and is currently implemented on the FTS Series 88 and the Dynabyte range, although it is shortly to be transferred to the Sirius I. According to Dave Barilla, sales director of DLA, the package is an enhanced version of Compact Accounting's payroll system, which has a multiple-rate module built on to it.

All the companies now involved in writing payroll software fully realise the importance of back-up and maintenance, and the majority guarantee a response within 24 hours. Omicron and DLA rely on local dealers to supply first-line support, while Jarman Systems intends to supply distributors with utility programs so that they can get into the Pascal code.

SOFTWARE BRIEF

Language range grows

A WIDER choice of programming languages is to be offered to users of the Triumph Adler Alphatronic microcomputer. Previously restricted to Microsoft's Basic, the range is now extended to include UCSD Pascal, Ansi 74 Cobol, and Ansi 66 Fortran.

Triumph Adler's Software Division has also released several programming tools, such as the dBase II interactive database management system.

In business

AN integrated business management system aimed at the whole spectrum of manufacturing companies has been introduced by Hogg Robinson Systems, part of the Hogg Robinson Group. The system covers stock control, order processing, materials requirements and financial accounting.

Seminar

A SEMINAR on IBM's database query utility, SQL/DS, is to be held by Pergamon Intutech in London from May 25-27.

Back-up for mini sites

by Sarah Harcourt
AN EMERGENCY back-up service for microcomputer installations afflicted by breakdown or disaster has been launched by Contact, the Hertfordshire company which sells computer time on other people's systems.

Through its time-broking database of installations, Contact will put companies in touch with sites with similar configurations able to supply emergency back-up. Contingency plans can then be developed.

Certificates will be given to confirm a company's participation in the scheme. They will include size

and type of its configuration and be issued on a six-monthly basis.

The scheme will enable users to obtain reduced insurance premiums. Josephine Wans, general manager, said: "We have obtained assurances from a leading underwriter that they will provide discounts of 25% or more on insurance cover to companies with our certification proving their ability to provide emergency back-up arrangements."

The service, which costs £200 a year to small mini users, rising to £500 for larger installations, has attracted 12 participants since its launch last week.



WANS... Discounts on insurance cover with microcomputer back-up service.

First viewdata TV poll

by Donald Kennett
VIEWDATA has been used for the first time to run a television audience participation exercise.

Voting and opinion polling of television audiences in their homes was first brought into service with a cable network four years ago in the US on Warner Communications' Qube network in Columbus, Ohio.

Now Granada Television's news magazine Granada Reports has used viewdata for an instant referendum on the Falklands crisis among 65 viewers in the North-west.

The poll is to be a regular feature of the programme, and the number of participants is to be expanded to 500 by the end of the year.

The viewdata system used is an Argon IVS-3 run by AGB Research at their Hanger Lane Computer Services subsidiary in London. One of its first viewdata clients Thames Television, has transferred one of its market research applications to the viewdata service from conventional terminals

dialling in to a dedicated mini. Thames is using viewdata for information distribution, rather than data collection, the purpose of Thames' experiment.

AGB is contracted to provide Granada with the results of its poll within three minutes of the question being asked on television. It has also taken on a more leisurely exercise for Channel Four which will provide the results the following morning.

Considerable time is still saved compared with telephone interviews, and fuller information is provided than with meters installed in survey participants' television sets.

Channel Four is to start this summer collecting information on viewing habits in preparation for its own launch in November. An initial 100 participants are to be expanded to 1,000 by the end of the year.

Phillips is supplying 9 inch monochrome terminals through Ansafone subsidiary Viewdata Business Systems.

Job scheduler for UK

by Maggie McLening
A NEW job scheduler for large IBM mainframes running under the MVS operating system is to be marketed in the UK by software supplier Westinghouse Management Systems, under an agreement with major US bureau On-Line Business Systems, OBS.

Westinghouse, a specialist in IBM-compatible software, currently has a scheduler for DOS/VSE machines called Jolman. The new product will expand the range of its systems software upwards into the larger mainframe area.

Called Prosper, and not to be confused with ICL's financial planning package of the same name, the new system handles automatic job scheduling, job-stream construction and automatic

release for sequencing of jobs within jobstreams, while generating production working documents.

Developed over 12 years by OBS, the second fastest-growing software products and services company in the US, Prosper is used on the OBS time sharing service to schedule between 1,500 and 2,000 jobs a day. It is intended to be the first of a family of products aimed at improving ease of use of IBM systems and training facilities.

Another of OBS' products for which Westinghouse has marketing rights is the Wylbur program development system, which OBS claims takes half the time and resources of IBM's own TSO system.

Japanese close in on IBM

by Boris Sedacev
THE Japanese are positioned to overtake IBM in advanced research and development for supercomputers. While IBM appraises the role of Josephson junction technology in its future product strategy, the Japanese are closing in with their own programmes.

While not claiming faster switching speeds for their Josephson junction devices, the Japanese have achieved smaller surface areas for the circuits.

A Ministry of International Trade and Industry (MITI) laboratory has developed a Joseph-

son junction using a "direct coupling" type of logical gate which it claims is simpler to produce than IBM's "magnetic field control" type, according to the Japanese Economic Journal.

The laboratory contends that with the IBM type it is difficult both to miniaturise and to speed up the action of the gates because of the need for a magnetic-field generating circuit.

Ambitious plans to produce a 1.5 micron line-width gate expected to switch at speeds of under 10 picoseconds (thousandths of a billionth of a second) are now under development.

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ITT Business Systems



April 1982

Decision Data packs a punch with 80 per cent rise in orders

LAST year Decision Data Corporation, the Pennsylvania peripheral manufacturer, missed getting into the Datamation top 100 by a whisker.

This year, with sales up 15% to just past the \$50 million mark, DD could make the magic century.

The company, in which the NEB-owned loss-maker Data Recording Instruments has a 40% stake, increased its order book by 80% from \$6.6 million at the end of 1981, to \$11.8 million at the end of 1981.

Company president Richard Schineller attributes this huge advance in sales to the IBM compatible workstation launched by the company in 1980.

According to Schineller volume deliveries of the CRT workstation began in late 1981 and he attributes some of the profit slide to the additional sales costs incurred as the company built up its workforce to market the device.

Despite the fall in profit, from \$3.05 million in 1980, to \$2.05 in 1981, the overall trend for the company is very favourable. Quarterly sales revenues have risen steadily throughout the year from \$10.1 million in the first quarter, to \$15.3 million in the last period of 1981.

The first quarter of 1982 continues the trend with sales of \$16.1 million.

The rise in profit through the quarters has been just as steady, from \$327,000 for the first quarter of 1981, to \$804,000 for the first quarter of 1982.

The profit surge in 1980, from \$627,000 in 1979 was in any case bolstered by an extraordinary item of \$1.5 million from the ending of some of the company's debts following the DRI investment.

Profits for 1981 appear to be solidly generated from operations. The fall in the company's indebtedness was also substantial, from £12 million in 1980, to £7 million in 1981.

Apart from the powerful drive into the IBM compatible market Decision Data also claims to be the only real plug compatible supplier in Europe.

According to Gisela Haywood, director of international marketing for the UK subsidiary, Decision Data will supply terminals, printers and communications devices which can be plugged straight into IBM computers without any form of modification.

She said Memorex was beginning to appear in Europe as a true PCM too, but without the native character sets for terminals and printers which are essential in Europe.



NEAL... "Microfilm boom is here".

"Europe is not one market, when you actually get down to the kind of keyboard used in the various countries," says Haywood, who has signed up distributors for Decision Data in all of Northern Europe except Norway this year.

She picked up many of her contacts from Hannover Fair last year and was surprised at the volume of new sales, over £200,000 worth, which the company made there.

In one revealing insight into being a PCM she said that Decision Data often found itself used as a lever to get IBM to deliver equipment. "Lots of people threaten

IBM with a decision in favour of Decision Data, in order to get IBM to speed deliveries".

The presence of a fully plug compatible vendor like Decision Data also curbs the inclination to use pre-emptive announcements well ahead of any possible delivery schedule in order to get customers to defer decisions in favour of the dominant supplier.

One of the more intriguing products supplied by Decision Data are card punches, to a market growing at roughly 20% per annum.

This may come as a surprise to those who thought the market for 80 column punches was in decline by about 20% a year. It is but within that decline is a vibrant and rapidly growing market for 80-column cards with an aperture which carries a microfilm picture of an engineering drawing.

300% rise in turnover

WESTON-Super-Mare based DRG Business Machines has achieved a near 300% increase in turnover in the year ended December 1981.

The company, a subsidiary of international packaging and business equipment suppliers Dickinson Robinson, raised turnover from £2.2 million in 1980, to over £6 million last year.

The boost is attributed mainly to a £2 million rise in DRG's peripherals and supplies division, according to managing director Michael Kilmartin.

Last year turnover in this division was £500,000. DRG specialises in supplying Japanese manufactured peripherals.

Although quality is emphasised by Kilmartin, aggressive pricing in pursuit of the substantial growth DRG has achieved probably accounts for much of the huge rise in sales.

Recession hits Sperry

THE recession and high interest rates are the main causes of the 11% decline in fourth quarter profit at Sperry Corp, parent of Sperry Univac.

Profit for the quarter was \$31.8 million, compared with \$92.4 million for the fourth quarter of 1980/81.

The decline caused Sperry to end the year with profits 29% down for the full fiscal year, from \$311.2 million, to \$221.8 million.

The company's new chief executive, Gerald G. Probst, says the company expects fiscal 1983 to be comparable with the year just past.

Plessey profits up 30% say brokers

WITH full year results due next week, industry analysts at brokers Savory Millin are forecasting pre-tax profits of £110 million at telecommunications giant Plessey. This would be a 30% rise on the 1980/81 figure of £84.5 million.

The brokers forecast a modest increase in turnover of just 7% to £934 million.

Had the company not disposed of several of its more marginal activities in capacitors, hydraulics and wound products, the analysts suggest that Plessey might have posted £1 billion.

They also forecast a total reversal in the company's debt position. In 1980/81 Plessey paid £11 million interest charges on its debts. This year is likely to see a total reversal, with the company collecting £11 million in interest on its cash balances.

Looking at the year ahead, the brokers expect Plessey's main telephone exchange division, which supplies about 30% of all British Telecom exchanges, to grow a little faster than in 1981/82. Higher expenditure by BT is expected to account for this, but Savory Millin expects no significant contribution from new products in the Office Systems Division.

An analysis of Plessey turnover last year shows that main exchanges and office systems contributed about 42% of the company's turnover, and 46% of the profits. Within the Office Systems Division 80% of the £128 million turnover was accounted for by small private automatic branch exchanges.

For the Monarch system, which Plessey supplies jointly with GEC to British Telecom, the company still has an order book stretching a year ahead and worth £20 to £30 million.

The reason the market is growing is because the 80-column cards allow mechanical indexing to be carried out, and engineering plans and drawings to be carried in very small sizes.

David Neal, UK sales manager for Decision Data says, and at the centre of it is the aperture punch-card.

He says the whole of British industry is going over to this method of storing copying and indexing engineering drawings.

Neal reckons that there are still two billion 80-column cards being supplied into the UK each year, on a declining basis year by year of 200 million cards.

For aperture indexed punch-cards he says that about 120 million cards are being used, with a year-on-year increase of about 30 million cards.

CW SHARES TABLE

Date 14/5/82				Index 1000				Change			
Pence		London Stock Exchange		Share		S		US Stock		E	
High	Low	Open	Close	High	Low	Open	Close	High	Low	Open	Close
193	101	101	101	193	101	101	101	193	101	101	101
174	100	100	100	174	100	100	100	174	100	100	100
151	99	99	99	151	99	99	99	151	99	99	99
148	98	98	98	148	98	98	98	148	98	98	98
133	97	97	97	133	97	97	97	133	97	97	97
120	96	96	96	120	96	96	96	120	96	96	96
109	95	95	95	109	95	95	95	109	95	95	95
98	94	94	94	98	94	94	94	98	94	94	94
87	93	93	93	87	93	93	93	87	93	93	93
76	92	92	92	76	92	92	92	76	92	92	92
65	91	91	91	65	91	91	91	65	91	91	91
54	90	90	90	54	90	90	90	54	90	90	90
43	89	89	89	43	89	89	89	43	89	89	89
32	88	88	88	32	88	88	88	32	88	88	88
21	87	87	87	21	87	87	87	21	87	87	87
10	86	86	86	10	86	86	86	10	86	86	86
09	85	85	85	09	85	85	85	09	85	85	85
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02	78	78	78	02	78	78	78	02	78	78	78
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00	76	76	76	00	76	76	76	00	76	76	76
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82	0	0	0	82							

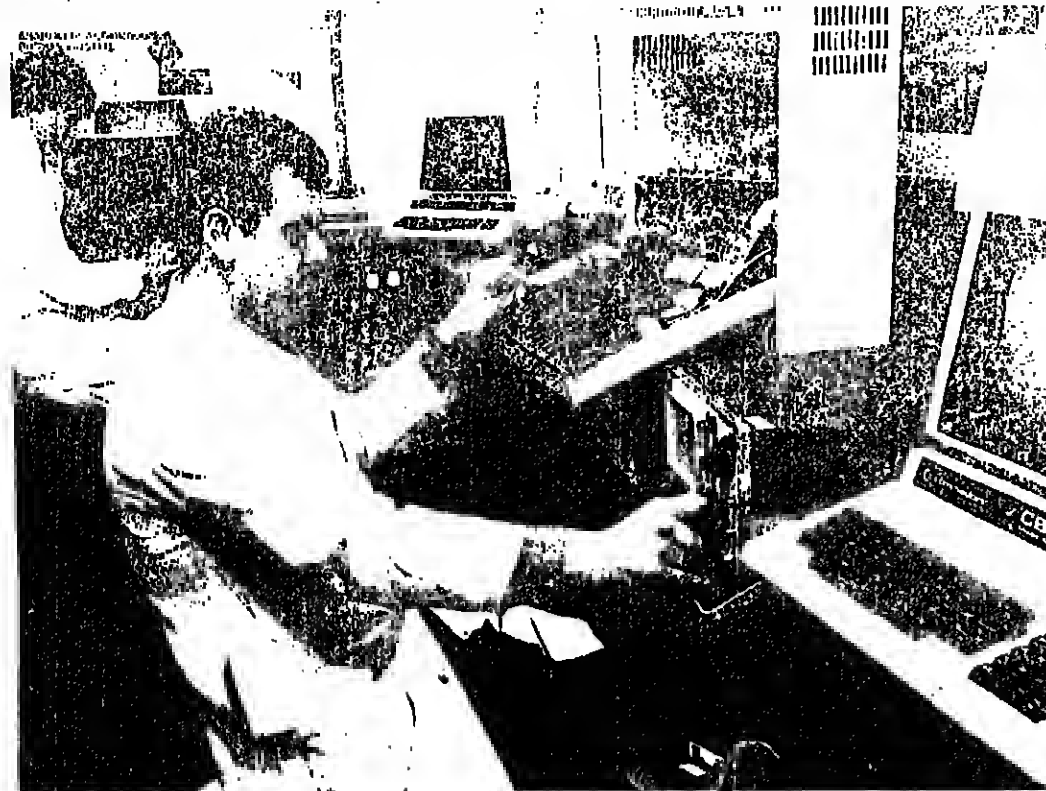
MICRO NEWS

Repairs
within
24 hours

JOINING the growing band of companies offering third party maintenance for microcomputers is Peter Williams Business Machine Maintenance. With technicians controlled from London or regional call distribution centres in Leeds, Manchester, Birmingham, Bournemouth and Bristol, the company claims it will answer a service call within 24 hours anywhere in the UK.

If the machine fault cannot be dealt with on site by the trained technicians and their technical support engineer back-up, Peter Williams BMM's workshop is kitted out to repair faults at component level, giving lower costs than straightforward board swapping.

The company can handle popular micros from Commodore, Apple, Tandy and Sharp.



One of Peter Williams BMM field service technicians will answer service calls anywhere in Britain within 24 hours.

Chip costs rise,
lead times slow
as slump eases

THE lifting recession and accompanying increased market activity for semiconductor components may be good news to the chip makers, but for the end user it looks likely to spell longer lead times and higher prices.

While US semiconductor manufacturers are showing relief — tempered by caution in some cases — that an upturn in sales heralds the end of a two-year low for the industry, there are warnings that it will also mark the end of price attrition.

Increasing demand, particularly for newer, more glamorous devices such as 64K dynamic RAMs, will start to push prices up and lengthen the time customers will have to wait for deliveries.

The pick-up in sales in mid-February has carried on through to April, causing leading figures in the US industry to look optimistically to the future.

Advanced Micro Devices' chairman Jerry Sanders reports, "The recession is over for AMD", and he predicts a rise of about 30% in AMD's dollar sales over the current fiscal year.

Signetics and National Semiconductor are showing encouraging order bookings, and Intel has started hiring people again.

Following its 12% increase in sales value over the last quarter, Intel is expanding its workforce by 500 people.

But both Intel and National remain a sense of caution. Neither is ready to predict imminent recovery for the semiconductor industry, believing the current improvement in sales could still be short term. The sales surge could be caused by customers replacing stocks which have been allowed to run down, and the industry still has considerable unused manufacturing capacity.

Even so, Intel chairman Gordon Moore last month firmly said he was sure the recession was over, following the significant improvement in world sales over the previous three months.

European sales feature in the upturn seen by the US manufacturers, along with sales to smaller companies building personal computers or terminals.

Video and computer games makers are also showing strongly

as chip buyers, while sales to the more traditional big buyers — mainframe and minicomputer manufacturers — remain flat.

In the UK, distributors and local operations for the semiconductor manufacturers share the belief that things are looking up. "We thought the UK would come out of the recession first," says Motorola microprocessor and microsystem marketing manager Robin Saxby, "and we now believe we're out and smiling again."

This was predicted for later in the year by Motorola's European marketing director Dedy Saban in his annual market review last autumn, but has happened some months sooner than expected.

Texas Instruments sees a "loosening of the purse strings", with customers beginning to go ahead on projects previously put on ice and sales looking pretty buoyant, while Japanese manufacturer Hitachi is noticing the distribution side picking up here in the UK.

Product marketing manager Nigel Simpson sees this as a good indicator of what the OEM side of Hitachi's business is likely to do.

But with the optimism shown by the battered semiconductor manufacturing industry comes the warning that prices and delivery are set to rise.

Welwyn Electronics' marketing director, Graham Latham has warned of delivery times stretching to 20 weeks for standard items and double that for specials, in the next six months, accompanied by a price jump.

Saxby shares this view, seeing particular new components particularly being in short supply. This is already noticeable for 64K DRAMs, with Motorola and Hitachi both reckoning on an eight to 12-week lead time now, rather than ex-stock delivery. To some extent this can be attributed to customers feeling they cannot afford to be seen not using these high technology products.

As for rising prices, Motorola agrees that customers will have to pay more for their chips — "we in pay more for their chips — we in industry have stopped giving it away," says Saxby — but Hitachi sees things more under control, and does not think prices will necessarily leap in the near future.

NEC application dept

JAPANESE microprocessor manufacturer Nippon Electric has opened an application department at its UK headquarters in Scotland. The department, at NEC Electronics' New Stevenson site, is now operational and responding to customer enquiries, says its manager Bob Laird.

The department aims to offer a three-tier service, giving advice on selecting suitable devices for particular applications, supporting cus-

tomers if they come across technical problems, and doing full project designs where customers do not have their own design teams.

At first NEC's microprocessor systems and peripheral devices will be the main concern.

Multi-bus-compatible board products will be supported, and in the longer term the service will extend to cover most of NEC's major products.

Second
source

FRENCH chip manufacturer Thomson-Effis is to sign a second source agreement with AMD. The five-year agreement to manufacture fully compatible devices covers AMD's 2900 and 2900 families and associated high performance memories.

The first devices to be transferred will be the 2901C bit slice and 29516 16-by-16-bit multiplier for digital signal processing applications from AMD and the 9340 video processor and 9341 character generator from Thomson-Effis.

Low-cost
evaluation

A SINGLE board microcomputer for evaluating the Intel 8088 microprocessor and developing simple 8088-based systems at low cost is offered by LPH Associates of Stony Stratford.

Costing £300, the EV88 board carries an 8088 processor connected in minimum mode, 2K of EPROM containing a monitor, 2K of CMOS RAM. Sockets for further memory chips are provided with decoding for 16K of RAM or EPROM, selectable in 2K blocks.

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To celebrate all this good news, we took our lovely model, The Lady Henrietta Fogglave, out into the lovely Spring weather for a lovely new photograph. (As you know, Digitalis is the botanical name for a Fogglave, which blooms in the Spring.

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GILB'S MYTHODOLOGY

Principles of Infotecture-3

Separate your basic goals

"FUNCTIONAL" goals are those on which system designers are given no choice. They are absolute "givens" without which the system would not serve the most fundamental needs of the system user.

Typically, functional goals describe the application at hand. For example "Bank foreign exchange system" or "Navy helicopter to ship communication system". Functional goals may describe necessary subsets of these major ideas.

Our design language traditions are strong in this area. It seems that the vast majority of system specifications is related to functional areas. This is understandable historically, since we have been so concerned with identifying exactly which functions were to be automated. The qualities of that automation have been taken too much for granted.

The initial transformations of the functions from a non-computerised environment to a computerised one gave us such dramatic improvements in attributes as cost, speed and reliability, that our only need was to know how to do the most primitive programming of the function.

Now many of us have long since progressed through one or more generations of automated solutions. For such systems the only interesting improvements are in the area of improved attributes.

Let me define the concept of attributes more clearly. Attributes are system qualities and system resources needed.

Qualities are measurable degrees of desirable system properties such as speed of work and response, reliability, availability, maintainability, extendability, ease of use and learning, security, portability and the like.

Resources are those system attributes which we would normally prefer to reduce consumption of during development and operation. These include money, time,

people-power, and machine capacity.

My observation is that the difference between system success and failure today is based on attributes; not on which functions are automated.

I believe we must begin to control the attributes of systems from the beginning of the design phase (when the users tell us what they want), throughout the entire design phase - particularly the high level architecture - and through to delivery. And in fact for the life of the system, we must be prepared to control measurably critical system attributes.

Normally we fail to do this. At best, a small minority of us state the required attributes in a clear,

The difference between system success and failure today is based on attributes; not on which functions are automated

meaningful language. Few exercise any real control over attributes during the design process.

We do try, in a primitive manner. We "structure" things and we promise ourselves to document better than last time. But most of this is a futile comedy which is not able to meet the real needs of the system.

One of the fundamental problems here is that we do not make a clear separation of functional goals from the attribute goals at the beginning of the project: before any serious design is made.

I find, in almost any goal document I come across (yes, yours too!) that not only are both goal types (function and attribute) intermixed in the same paragraphs. But they are even intermixed with design techniques, which then



Tom Gilb is an independent consultant, lecturer and author on computing topics.

unfortunately might be taken as "goals", when they are in reality only presumed solutions to a problem, which is as yet usually unclearly specified. More about techniques in the next column.

The reason for insisting on separation of attributes from functions is that functions are merely binary demands. We must meet them. The only question for the designer is when they shall be met in an evolutionary process, and how they can be sub-divided into functions which can be separately implemented for various reasons.

Attributes, on the other hand, are "measurable ideas on a scale". We may have absolute demands as to the "worst case" levels for each attribute. But the interesting design battle is fought in resolving the inevitable conflict between attribute quality goals which are struggling for resources in direct conflict with one another.

If this conflict among portability, maintainability, response speed and usability is to become clear to the designer, then I consider it necessary that these attribute goals are treated separately from functional goals and must certainly from presumed solutions ("techniques").

Try the following exercise on the design specifications you are currently working on: Mark all functional goals in pen with "F", all attributes with "A" and all techniques or solutions with "T". Maybe you will decide to list them separately for clarity in the future.

Tom Gilb

HUMAN TOUCH

Keeping track of time

IT is the rotation of the Earth, its passage round the Sun and man's need for orderly behaviour that has brought us to assign names to periods like day, week, month and year. Keeping track of the passing of time has required that these periods should be enumerated and we are all familiar with a naming and numbering convention.

It is interesting to speculate on why the days of the week and months have names, while the days of a month and the years have numbers. Perhaps the philosophers could relate these conventions to the alternatives of naming or numbering houses in a road, as exists in Britain.

Not that the conventions on writing down dates are particularly universal. In the US the month precedes the day while in Britain custom dictates the other way round.

The Canadians have a particularly difficult time with no accepted custom and I have heard of companies where different departments follow different conventions. The Chinese name their years and different religions adopt different days of the week as their Sabbath and count their years from a different origin.

It is as if we did not all share the same rotating planet on its path round the same Sun.

Human beings can adjust to all these differences. Tell them where they are today on a different calendar, and day follows day until the next adjustment is required. For a computer program to have the same flexibility it would need to be able to accommodate all the various calendars and every time a date was entered to be told the

Cliff Dillaway

10 YEARS AGO

From Computer Weekly of May 18, 1972

A BIGGER share of output for export and a continuing low level of home demand for computers were the dominant features of the latest figures on the UK computer market from the Department of Trade and Industry

With the avowed intention of injecting new blood into management, ICL appointed Geoffrey Cross, a top Unilever man, as managing director at a salary of £25,000 a year. Honeywell launched its System 700.

Relying on old friends

THERE have been reports that the great white hope of British Rail, the Advanced Passenger Train, APT, is to follow its steamy ancestors into oblivion. The APT has not proved the most reliable means of transport ever to run on rails, and looks likely to be replaced by an electric version of the much older High Speed Train, HST.

The abandonment of new technology, and the return to older, proven machines, begs the question: Do we really need Josephson junctions at all? Chad for one would like to see a return to the days when computer persons were real persons, and persons were glad of it.

Last word

COMPETITORS in the London Marathon were bar coded to aid identification. As the plucky athletes jogged over the line, an official armed with a portable bar code reader read the relevant details from competitors' backs, and fed the data into the computer.

One entrant, on the verge of exhaustion, staggered into a supermarket, collapsed over the checkout, was automatically laser scanned, and presented with a bill and 500 Green Shield Stamps.

You don't believe me? Very wise.

FOCUS

Revolution at the Palace

THE debate on whether computers offer a threat to jobs looks set for an extended run. A recent news item claims that because of the introduction of microchip technology in Buckingham Palace, it was possible to reduce the number of servants. It is not yet confirmed that robots will be replacing the Household Cavalry.

Such news will be far from pleasing to our energetic Minister for Technology, who has been spreading the theme that IT means jobs.

Speaking at the annual convention of the Institute of Directors, Kenneth Baker said the importance of information as an employment base could not be underestimated. According to his figures, UK information workers represent 40% or ten million of the total workforce.

Before the computer recruitment agencies start wondering where they missed out, a close study of the official figures reveals that information workers embrace such groups as postmen, administrators, teachers and writers - a collective massing of workers not always associated with information processing.

Hopefully, the same government manpower computer programme will produce some more meaningful computing related statistics, particularly relating to women in DP. The Equal Opportunities Commission has issued a report that largely condemns computers for eliminating over one-third of all existing jobs for women.

Without wishing to challenge such an authoritative source, some facts and figures to support the claim would be welcome.

Certainly there would appear to be room for any redundant female worker in the computer industry. An NCC national survey has found that the average computer installation had 6% fewer system programmers and 11% fewer analysts/programmers. Meanwhile, the NCC reports that the shortage is getting worse, with demand expected to increase over the next five years by more than 20%.

It is far from proved that the introduction of computers results in a smaller workforce within the company. In many well-documented cases, the arrival of a computer signals extra workloads all round. Dealing with the increased stacks of management information, covering such matters as sales forecasts, marketing opportunities and pricing structures and stock levels, will involve much clerical assistance. If only to file away the respective reports.

In any case, few companies buy a computer with the declared intention of reducing personnel levels.

Far from being given the elbow, personnel are more likely to be dispersed around the computer and management services section. It is all too typical of office management to complain that computer management have been spending more time and company resources building empires rather than databases.

User departments have also been known to comment on the proportion of the company budget being allocated to the DP section. Having survived the job threat from standard sized computers, fears are now being expressed in connection with the micro revolution. Apples, Pets and soon the IBM Personal Computer are expected to displace on the desk of traditional clerks, but many of the company executive, but many of his staff. Once again such fears are groundless. Many companies are now making use of micro in small, with probably only minimal staff levels.

Alan Simmonds



Cliff Dillaway is an independent consultant specialising in accounting software, taxation and payroll.

calendar format being used.

The suppliers of program packages have to build in that much flexibility, probably with a parameter to specify the date entry format, and then all subsequent dates entered are assumed to be in that format as a default option.

The parameters entered to a program package can be changed so the package designers need to adopt a strategy that will withstand such alterations. A user who needs to change the method of representation does not expect all his calendar calculations to go awry.

The strategy I suggest is to store dates internally in the system and on the files in a format CCYYMMDD according to the designer's home conventions. The CC stands for century. Any date input or to be output can be converted to or from that format by transformation and an offset.

Arithmetic on dates is more readily understood if the usual greater to lesser magnitude positional representation from right to left is followed.

Cliff Dillaway

ComputerWeekly

Quadrant House, The Quadrant, Sutton, Surrey SM2 5AS
Thursday, May 20, 1982

UK hi-tech needs room for growth

HIGH technology in the UK could find its growth stymied by a lack of suitable factory space.

In the five years to 1980, the production index for the computer industry rose by two and a half times, while the same index across all industries in the UK fell by five per cent.

But the growth of the computer industry has not been matched by the development of suitable building. Since 1967, the amount of floor space available in England for warehousing has increased by 99%, for offices by 64%, and for industrial use by only 12%. Even this small growth rate is of little help to high technology companies, whose property requirements are substantially different from those of the declining industries such as engineering and steel.

These are the conclusions of a property survey published today by chartered surveyors Herring Son & Daw.

The companies on which Britain's future prosperity depends are, almost to a man, involved in some form of information technology, so why are they having problems when they want to expand?

One problem is that landowners have the option of selling their acreage in either an undeveloped or developed state. While considerably more money is to be made from the sale of ready-to-occupy premises, there is the attendant risk of building unwanted industrial accommodation. The recession has meant that the building of factories has developed a rather risky reputation.

For this reason, developers have traditionally fallen back on the tried and tested, but unimaginative, warehouse. Computer companies can use such premises - at a cost. The money involved in converting unsuitable warehouses can run into millions of pounds, which ties up funds which could be more profitably employed.

Even if funds are available for conversion, another stumbling block can appear - government regulations on building use classes.

Properties that offer a mixture of office and manufacturing space are, by law, forced to locate on land designated for industrial use. Amidst genuinely dirty factories, situated well away from the sophisticated workforce computer companies require, even the best equipped building will not attract the calibre of staff required.

But the restraint being applied to British companies is not the only area in which the country's economic future is being threatened. Foreign companies have made clear that they view the UK as a base from which to attack the much more lucrative EEC market.

For both American and Japanese companies, the UK is a useful platform within the EEC tariff-free area on which to build manufacturing plants.

Britain's economic and political stability provides by far the most attractive prospect for a European base. But make no mistake: if conservatism puts barriers in their way, they will not hesitate to invest in Germany, France or Eire instead.

The buildings required by the computer industry are typically a combination of flexible office accommodation and very light, clean manufacturing space. This is the category for which no "use class" currently exists. Practically the only property available of this type is in purpose-built science parks, which offer excellent amenities and access to motorways, airports and railways.

But the number of science parks is insufficient to cater for the needs of the whole industry. What is needed is an awareness on the part of property developers and financiers of exactly what is required by growing computer companies. But without a change of attitude by planning authorities, the building entrepreneurs' hands are effectively tied.

Information Technology Year was designed to promote high technology and to give its manufacturers a shot in the arm. But it appears that, in the property area, the government is administering something more akin to a shot in the head.

1984 and all that . . .

THIS week's example of the strange things people say about computers was sent in by I. R. McCoubrey, who wins £5. A new computer costing £35,000 has to be bought by Surrey County Council to handle increased red tape.

LETTERS

The age of the bureau?

I NOTE that in Systems Thoughts (CW, April 29) Norman Revell uses the decreasing cost of hardware to predict the demise of the bureau industry as we know it today.

However, while the hardware cost is decreasing, there is an argument that the ongoing cost of ownership is increasing. The hardware cost decrease is changing the relationship behind the purchase of a computer system from one of hardware orientation to that of software orientation.

Until recently most users spent a great deal of time in the data processing department evaluating hardware specifications, the architecture of processors, disc access time, maximum capacity of memories and discs, finishing with the tried and tested benchmarks to point out the general direction which should be taken to select the right machine for the job.

The machine once selected, the next step is to choose the software which, lo and behold, is not available on the selected machine.

However, in the past it has not been too expensive to adapt the software to run on the machine selected and to build in the necessary modifications to suit the business operation.

The scenario presented in Systems Thoughts is correct as regards the changing relative costs of labour and machine, but does not go far enough in showing how critical the selection of software is now. Software now dictates the success of most computer projects.

Both mini and microprocessor-based systems are singularly lacking in good user-friendly system software and application software.

But computer bureaux, on the other hand, have relied for their very existence on the quality of the software offered and are now in a position where they hold the key to the future of our industry.

Nobody pretends that the bureau industry does not have to change and to take advantage of the cheaper hardware available. Certainly most companies in the bureau industry have evolved a strategy for users which can offer the software products on a range of hardware from micros to minis and through to the flexibility of a time sharing service.

It is difficult to imagine how the hardware vendors with their beleaguered profit figures will ever raise the funding to match the user-friendly software available from most bureaux. Indeed, most hardware vendors are anxiously developing third party software schemes to mount better systems and application software onto their hardware.

I would suggest therefore, that the day of the bureau industry is just beginning as they re-package their offerings, while the days of the high growth and profit figures associated with the mini and microprocessor base vendors may well be numbered.

ROGER SMITH
UK general manager
CSS International
London SW1.

User's suite experience

I FOUND Cliff Dillaway's scenario (Lost in a Maze of Screens, CW May 6) a very telling reflection of our own experience with a menu-driven system on our Data General machine.

Towards the end of March we installed a suite of programs around our existing application. In this suite the first screen display accepts user identification and, if necessary, password, and the second poses the question "What do you want to do?"

The reply is a mnemonic which accesses the appropriate application program directly. Should the user be a novice, entry of HELP

allows him to consult lists of valid mnemonics.

Experienced users and neophytes alike took to the new system very quickly indeed, at the only additional expense of providing a printed list of appropriate mnemonics at each terminal.

We have found the suite of programs both robust and reliable, and should be pleased to provide further details to interested parties.

MICHAEL BIDDLECOMBE
Operations supervisor
SGS Inspection Services,
Winkfield, Berks.

General Systems User Group

THE General Systems User Group is a group of companies in the North of England who use or have an interest in IBM information system machines (used to be known as General Systems machines), eg Series 1 System 23, 32, 34, 38, the 5280, 5120, and so on.

We meet several times a year at a venue with easy access from the M62, and usually have presentations on topics with relevance to the membership. We feel that there are many more companies in the area which could benefit from membership of this group, and we

would be grateful if you could publish details of this letter. Anyone wishing to join the group should contact the secretary at the address shown.

The next meeting is on June 3, when we will have a representative from IBM giving a talk about viewpoint on IBM machines.

M. S. CLARKSON
Secretary

General Systems
User Group
S. R. Gent & Co Ltd
Doddwirth Road
Barrowby S70 6JE.

Liwareware File by Don

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CAN YOU SPARE MORE THAN A THOUGHT FOR A CHILD?

CHILDREN WITH CROHN'S DISEASE suffer intermittently with such symptoms as inhibited growth, diarrhoea, loss of blood, abscesses and fissures. The disease, which is incurable, may progress with anaemia and muscle wasting. Abnormalities may also spread to the eyes, skin and liver. The risk of cancer is significantly higher than normal.

The disease has shown a dramatic increase in recent years. CROHN'S IN CHILDHOOD RESEARCH APPEAL C.I.C.R.A. is a Registered Charity established by parents of children suffering from Crohn's Disease in order to mount a research programme aimed to find a cure. We run the Charity with no administration costs whatsoever and all money raised is used to further medical research. The size of our research programme is limited only by the money which we desperately need to finance it.

We need funds NOW to expand our present small research programme and hasten a cure. Medical research in this field offers a real hope of an early breakthrough please send a donation now to C.I.C.R.A. 46, London Street, Reading, RG1 4SQ WITH YOUR HELP A CURE CAN BE FOUND

On the 13th June, 1982 a Royal Gala Variety Performance is being held at the Hexagon, Reading in aid of C.I.C.R.A. and the Gala will be attended by Princess Alexandra. Tickets are available from £10.00. If you are interested in supporting this event in any way, contact Mike Gyselsynck, telephone Reading (0734) 83226.

DOWNTIME

And now for something completely useless

THE human race has always been susceptible to pseudo-scientific mumbo-jumbo, especially when related to some mysterious device for improving the quality of life.

The Victorians had a voracious appetite for any mechanism, however rudimentary, which included the word "magnetic" in its title - such as "The Acme Magnetic Water Closet (patent applied for)".

More recently, rheumatism sufferers flocked to buy copper bracelets, which purported to cure the ailment, but which more often simply caused the victim's wrist to assume a green tinge.

Those little chains often seen dangling from the backs of cars (avoid harmful static electricity cure travel sickness), and the

amazing stick-on plastic film claimed to convert black and white television to colour, also fall into a doubtful area of marketing.

Until now, computers have mercifully been free of such gadgets. Whether this is due to the crooks' inability to invent a gadget worse than the computer itself, or to the disproportionately high percentage of moderately intelligent people within the industry capable of spotting a useless device, we may never know.

But now comes a device showing all the signs of being a UBBID (Useless But Expensive Device), aimed squarely at the computer industry. It is a box emitting mysterious particles which can perform tasks ranging from curing the common cold to creating a manifesto for the SDP.

The device in question is an ioniser, designed to replace the negative ions lost in air-conditioned environments, and as vital to the health of human beings as carotenes and Coronation Street.

"Night shift headache? down 78%. Nausea? down 100%. Dizziness? down 100%" - a direct quote from one company's Press release.

Believe it if you like, but the only sure way I know of to minimise night shift headache, nausea and dizziness, is to keep the operators out of the pub.



Couldn't we just stick to games in future?

The games they play

SOMEONE once said "War is good for business." Or if they didn't, they should have. While Britain is not technically at war (at the time of writing, anyway) with Argentina, for Chad at least, people getting killed is a pretty close approximation.

I would be grateful for any suggestions on what should be done with the bright young thing at Atari who came up with the idea of promoting its computer games by paying them to the nuclear

submariners currently on patrol around the Falklands.

"The submariners while away the hours playing war games and space invaders," runs the Press release, which contains the unfortunate line "The Atari computers went into action immediately."

Only playing games, no doubt. But surely the time-honoured promotional method of playing journalists with drink is in better taste than jumping on this particular bandwagon.

COMPBTITORS in the London Marathon were bar coded to aid identification. As the plucky athletes jogged over the line, an official armed with a portable bar code reader read the relevant details from competitors' backs, and fed the data into the computer.

One entrant, on the verge of exhaustion, staggered into a supermarket, collapsed over the checkout, was automatically laser scanned, and presented with a bill and 500 Green Shield Stamps.

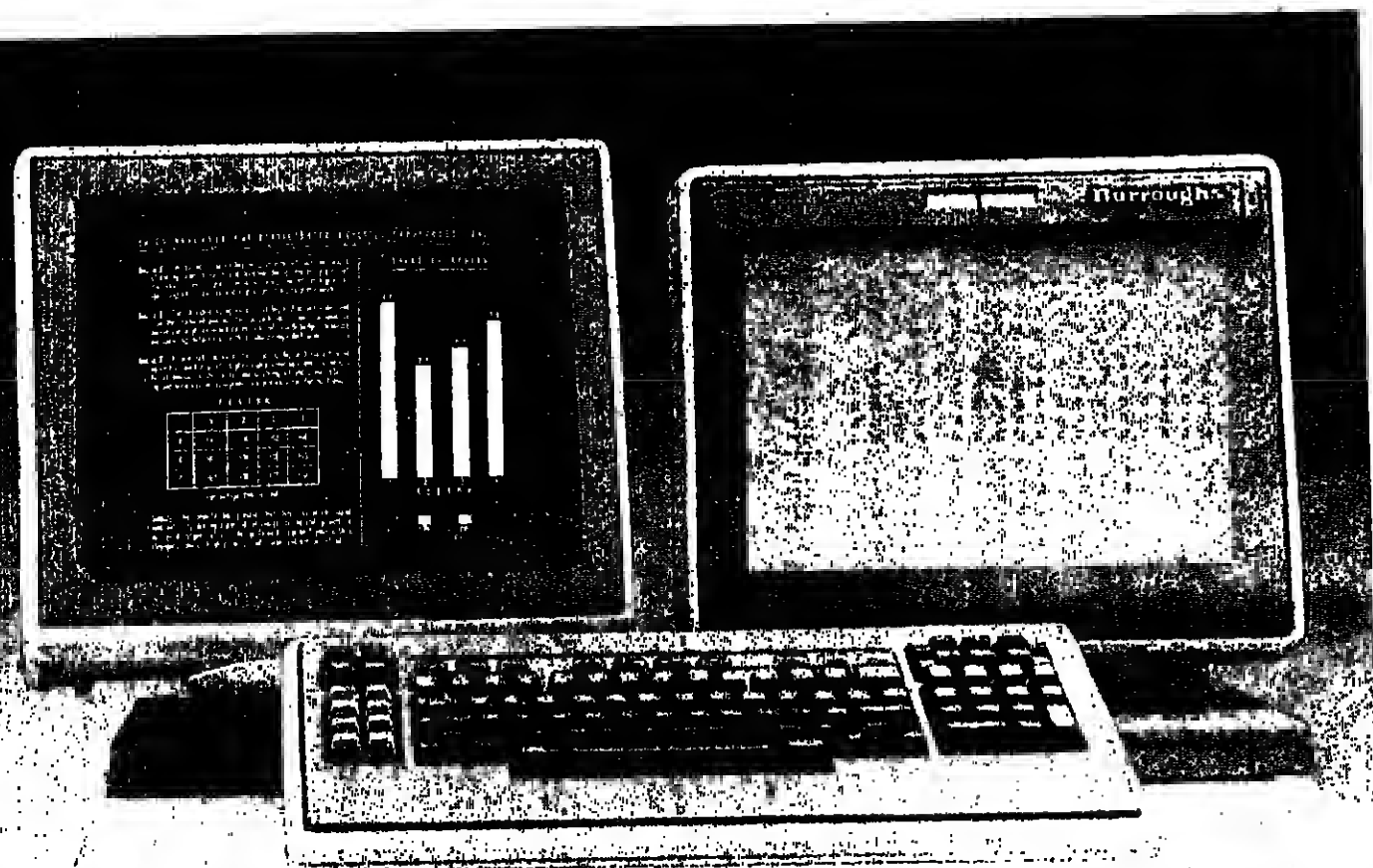
You don't believe me? Very wise.

Chad



"I know we haven't got a computer, that's the error."

To celebrate the launch of the B20 we're giving away a word processor, free.



The launch of the Burroughs B20 marks the birth of a new generation of multi-functional business micros.

Combining the word-processor and data processor into one desk package, the B20 forms the basis of a distributed intelligence system that'll stand head and shoulders above anything else in its field. So when you buy a B20 business micro you also get a word processor—and a lot more—as part of the package.

How powerful is it?

The B20 is the latest of the new 16-bit micros, with an outstanding and flexible operating system.

Each desktop unit consists of a 16-bit CPU, up to 640 K Bytes of RAM, keyboard, video display and optional mass storage. And on top of that you've got four powerful high-level languages—BASIC, PASCAL, COBOL and FORTRAN.

How easily can I expand?

The B20's optional mass storage devices range from the inexpensive mini-floppy units all the way up to high-performance Winchester drives that'll take you up to 60 M Bytes of storage.

When it comes to linking with other systems you've got no worries either. As well as a Parallel Centronics, it has one RS 422 and two RS 232 interfaces.

And to cover pretty well every other possibility, you've got 3270, 2780, 3780 and ATE compatibility on top of that, with access to other networks through X25.

Now you come to the most exciting feature of the B20.

You can cluster multiple work-stations to form a high-speed local area network.

Which is where 'distributed intelligence' comes in.

Why 'Distributed Intelligence'?

Traditionally, in a shared-logic system all of your terminals relied on one central processor to provide most of the processing, program handling and storage.

When these systems were set up it was because terminals were relatively cheap compared to the cost of actual computing power.

But obviously, the more terminals you hook onto the system, the slower the processing speed, and the greater the strain on your resources.

The arrival of the low-cost 16-bit processors has changed all that.

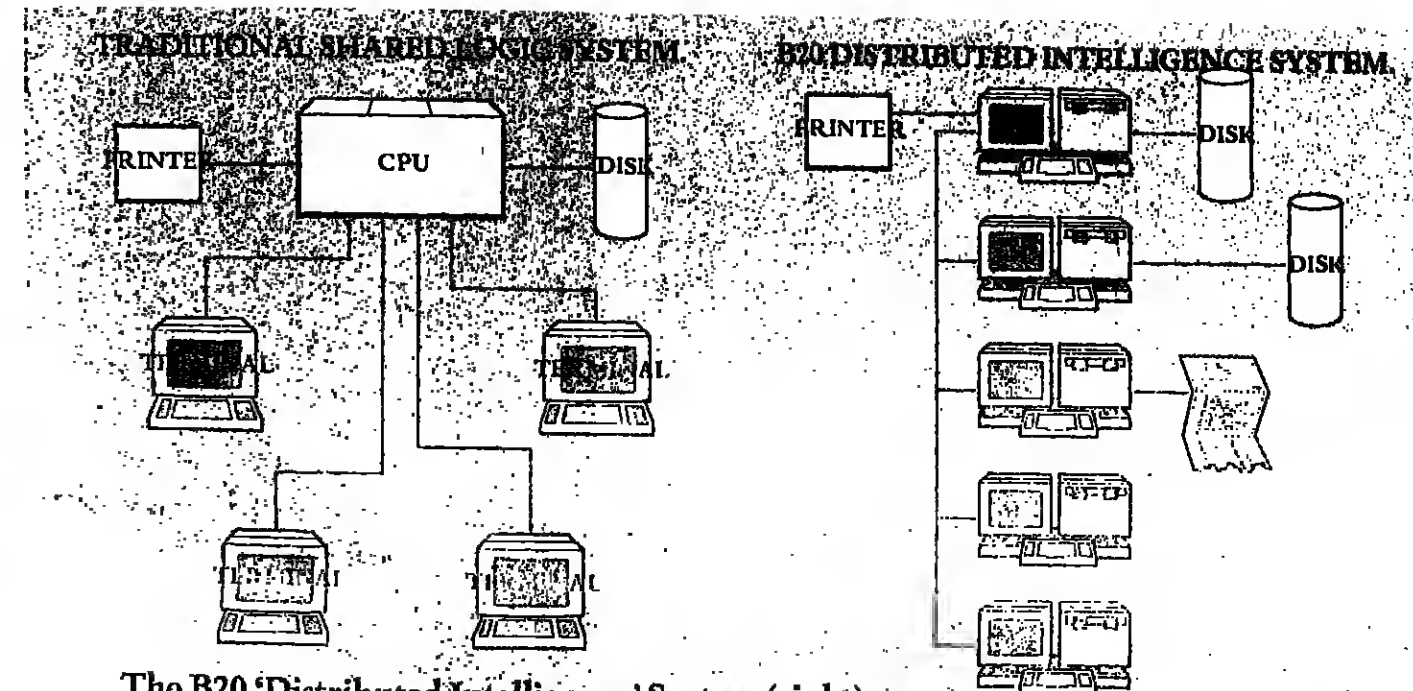
Now it's just as economic for each workstation to have its own processor.

You can still share resources such as printers and mass storage, but now each workstation can process independently of the rest of the network.

Which means you end up with a network that is many times faster than using the traditional approach and at a lower cost.

What about Word Processing?

Unlike a lot of our competitors, we



The B20 'Distributed Intelligence' System (right) allows each work station to process independently giving more power at less cost.

haven't simply tagged on a word processing package so we can charge you more.

The B20 has been designed as a word processor, with, for example, a full WP Keyboard. In fact, it would put a lot of others to shame.

As for the word processing software, the Burroughs WRITOne package designed for the B20 is a very flexible, easy-to-use, system which will also interface with your data processing files. What's more, the B20 can have

a full 132 character screen, (which is as wide as any print-out you'll come across).

Then there's a 256 character font, and because these are stored in RAM instead of fixed in ROM, you have the ability to generate special characters and multiple fonts, to suit your needs exactly.

What about Financial Modelling?

With your B20 you can use one of the most advanced financial modelling and planning packages on the market—Multiplan®.

It'll allow you to answer all those "what if" and forecasting questions, using the built-in flexibility and power of the B20.

Will my end users feel at home with it?

The B20 has been designed with people in mind.

The 15 inch video gives a clear image so you won't strain your eyes, and tilts and swivels so you won't strain your back, either.

The full-size movable keyboard is as easy to use as a calculator and has the usual functions as well as a few unusual ones, such as "Help,"

"Next Page" and "Finish." And there's a set of programmable function keys as well.

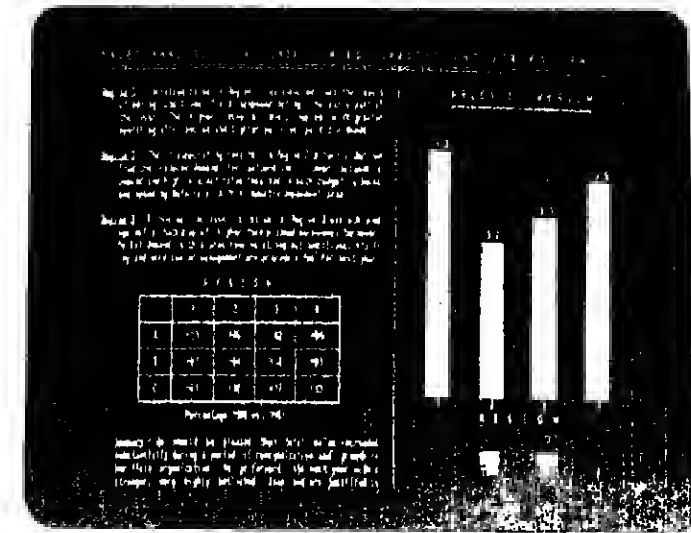
How much does it cost?

A lot less than you think. For example, by clustering multiple B20s, each work-station can cost less than £4,000.

There are plenty of people who'd try to charge you that sort of money for a word processor alone.

Starting at under £4,000 the B20 gives you everything you'll ever need from a business machine.

And when the time comes it can grow into whatever you want it to be.



With its multiple window technique the B20 can show up to 8 different sections at the same time.

Why Burroughs?

We've been helping companies of all sizes to manage information for more than 95 years.

We've probably more experience than anyone else in networking.

And when you buy a B20 you have access to the full nationwide support service offered by Burroughs.

So if you're looking for a desk-top business micro, but you want a word processor and distributed intelligence as well, fill in the coupon.

® MULTIPLAN IS A REGISTERED TRADEMARK OF MICROSOFT INC.

Please send me further information on the B20. Contact Burroughs Machines Ltd., Dept. CW20/5, Heathrow House, Bath Road, Hounslow, Middlesex. Tel: 01-897 2751.

Name: _____

Company: _____

Type of business: _____

Address: _____

Burroughs

'If a defence system is too long in development, the cost is met in blood'

WRITING software for defence brings its own peculiar problems. And Leasco Software, of Maidenhead, suffered from them recently when developing a strategic information system called Britmiss for the Royal Navy.

The brief from the Navy was for a system capable of accepting English language messages from existing teleprinter circuits and to provide a database on position and movements of ships and aircraft. This information would be transmitted over secure satellite communications circuits to a compatible terminal on ships and at machine headquarters.

One difficulty is that a defence system, while obviously complicated to develop, must not take too long, or it will be obsolete. This problem is not confined to defence systems, but is especially acute when the cost of lagging behind the enemy may be met in blood.

The system, although still undergoing enhancements, is already getting comprehensive field testing in the Falklands. But unfortunately for the Fleet, only three ships have so far been fitted with the system, although the information contained in it can be picked up by any ship over a teleprinter.

In this case, however, vital time and manpower is consumed collating and interpreting the information, which is done automatically by Britmiss.

Another problem is the bug of secrecy. This applies to the development of the system, where a programmer writing one part of it is denied detailed knowledge of the remainder.

Another encumbrance for a defence system is that the information has to be as up to date as possible. The information available to Britmiss is typically several hours out of date, so the Navy asked for a "dead reckoning" element to be added to the system.

This would extrapolate from the available information to yield an estimate of the present position of ships.

Another unique feature of this kind of defence system is the encrypting of messages. Leasco achieved this by having code cards selected at random by the computer to keep the enemy guessing. In this way, if a ship was captured by the enemy, the information would be valid for only a few days.

Britmiss has to pass words and messages so secret that the Navy did not want them stored on the computer in any form. But as John Graham, manager of Leasco's military group points out, the computer has to create a file to receive these messages. So they have to be on the computer, albeit temporarily.



GRAHAM... Successful solution to unique problems of building a naval information system.

by Philip Hunter

Experts break new ground

by Donald Kennett

ONE of the first companies to put expert systems on a commercial footing is the three-person company Expert Systems. Incorporated nearly two years ago, the Oxford company has been providing consultancy services in system design.

Last November saw the launch of its first product, an implementation for Digital Equipment of the Prolog language developed for artificial intelligence applications 10 years ago at the University of Marseille.

Initially written to run under the RT-11 operating system, Expert Systems' Prolog-1 interpreter has now been adapted also to run under RSX-11 and design work has been started on versions with which to tackle the much larger market among microcomputer users. By the end of the year versions should be ready to run under CP/M and under Unix on PDP-11s, says Expert Systems' managing director Alex Goodall.



WHITE... "Greater stress on interviewing".

Beware agencies with too many candidates

COMPANIES should beware of recruitment agencies that put forward dozens of candidates for jobs that demand hard-to-come-by specialist skills.

Many agencies do just this, according to KPG Computer Support Services, a UK firm which supplies contract programmers and analysts.

Frank Swift, KPG's manager of systems programming, accuses many agencies of all sizes of being no more than glorified photocopying agencies.

Swift himself joined KPG from a company which hired a number of contract staff, and claims to have found the company's approach refreshing.

"We put more stress on interviewing people," adds Brian White, KPG's 29-year-old managing director.

Swift's criticism of many other agencies is that they have not bothered to make any effort to determine the truth of the claims made on an applicant's CV. Companies, on the other hand, often put little effort into interviewing short-term contractors in the apparently mistaken belief that the agencies have thoroughly checked them out.

"Some do not even bother to check first before putting someone forward for a job," says Swift.

From his own experience, I once signed on with over 20 agencies, and can confirm that half of them took my CV at face value, and only four or five gave me a technical interview.

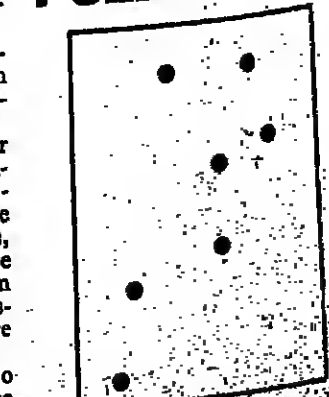
Still, it is arguable whether the

agencies should provide thorough vetting. They can hardly be expected to possess specialist staff in all the disciplines.

But the agencies exist to save companies' time and provide the right people. Their strength surely lies in forging close working links with individual companies and being familiar with the particular requirements.

That is why KPG employs someone like Swift, who has experience of programming and analysis as well as hiring contract staff himself.

PUZZLER



DRAW three straight lines across this rectangle, without actually touching any of the seven points in such a way that each point is enclosed by one of the lines.

See page 47 for solution.

PEOPLE

Managing director for Storage Tech

STORAGE Technology UK has appointed Derek Thompson as managing director. Former managing director Colin Cook has been promoted to head of European marketing at Storage Technology Europe.

Thompson was formerly vice-president of Documentum World Trade and after the company's merger with Storage Technology in 1981, became director of the European marketing. His previous management experience gained

during 15 years in the industry includes posts with NAS, Intel and IBM.

Cook will be looking at new ways to generate business in Europe. He has been with the company since 1979, joining as sales director and becoming managing director a year later. The company says he has been the driving force behind its success in the UK. Storage Technology has grown to \$30 million in just over three years.

Wang grows

THE Wang UK User Group has opened membership to users of the Wang 2200 series. It arranges regular product group meetings, for users of OIS and VS equipment and there are a number of special interest groups covering such topics as communications, word processing and Basic. WUG membership already stands at over 100. Details from secretary Ann Turner, 12 Christchurch Road, Bournemouth BH1 3LW. Tel: (0202) 291111 ext 201.

Distributor

CEMA Business Services has been taken on as the first distributor for Nokia terminal systems. The distributorship is initially worth £200,000 with the Manchester-based CEMA distributing the Nokia 202, 210 and 3276 VDUs, the company's microcomputer and the CRS 200 point-of-sale system. CEMA's managing director Donald Wright said he was "delighted" with the deal.

John Waldock has been appointed product manager for Texas Instruments products at BA Electronics. He joins the company from Unitech, where he was in electronics distribution. Product manager with responsibility for SGS, General Instrument and Beckman products is Neil Howes, formerly a product manager at Celdis. Paul Meers joins the company as microsystems support engineer. He was previously National Semiconductor franchise manager at Marco Marketing.

John Clarke has been appointed terminal systems product manager of Nokia (UK). He joins the Finnish-owned company from Honeywell, where for three years he was software development manager.

Frank Rainsborough has been appointed Southern area sales manager, business machines division, at Sanyo Musubi. He was formerly in microcomputer hardware sales at Gordon and Goich.

Nick Brewin and Alistair Hardy, both formerly with ICL, have joined Zynar as sales executives.

Mel Pashey has joined Atrow Business Computers as sales director. His previous experience has been at Klenze Data Systems and Sperry Univac.

Doug Staplea has been appointed regional sales manager for the South of England at Microm-Bor. He has been in data communications sales for 14 years.

Computers in medicine. IBE, IBE, Savoy Place, London. Details on 01-240 1871.

Word Processing and COM. BCS Microform Group, NCR Theatre, Marylebone Road, London NW1. Details Chris Marles 01-434 1031. £10 BCS members, £12 non-members.

Meeting. BCS Database Group. Details Ian MacDonald 01-405 8233.

Visit to the Midland Railway Trust. BCS Nottingham Group. Details Ray Fowler on Nottingham 415415 ext 4725.

Patner and Pat computer networks. BCS Sussex Microcomputing Group. Meeting Room, Kings and Queens, Marborough Place, Brighton BN1 2BB.

The X and Y of computer graphics - news and views on the way to present computer data as a picture. IDPM Central London Branch. Alterra Software, Imperial House, 15-19 Kingsway, London. 6.30.

Impact of new technology on personal life. IDPM Sussex branch. Venue to be announced.



Timothy Johnston is to take charge of BIS Software's new Bahrain office as general manager. Johnston, who has been with BIS for three years as the company's London marketing manager, is an associate of the Institute of Bankers. He spent 13 years with the Hong Kong and Shanghai Banking Corp and has worked in data processing in Hong Kong, Thailand and Singapore. Also leaving to fly the BIS flag is Charles Barratt, who has been appointed general manager of BIS Banking Systems' Singapore office. He joined the company in 1978 as a senior consultant, moving later to international marketing.

CII-HB appoints chairman

JACQUES STERN has been co-opted to the board of directors at CII-Honeywell Bull to replace Roger Faroux, who has resigned. Stern has also been named chairman of the board.

In 1964 Stern founded SESA (Société d'Etudes des Systèmes d'Automatisme) and became chairman and managing director. The company started to develop internationally in 1970, with the establishment of a firm in Germany. This was followed by companies in the US, the Benelux countries and Italy. In 1979 it formed a jointly owned subsidiary with CII-Honeywell Bull.

EEA chief

THORN EMI's chairman and managing director Tom Mayer has been named president of the Electronic Engineering Association. An electronics veteran, Mayer spent 32 years with Marconi, latterly as managing director of Marconi Communications Systems.

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JUNE 20
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JUNE 23
Patner and Pat computer networks. BCS Sussex Microcomputing Group. Meeting Room, Kings and Queens, Marborough Place, Brighton BN1 2BB.

The Interactive Office.



Our new word processor makes text composition and editing fast and simple. Because it is linked to the computer, it can also process data.



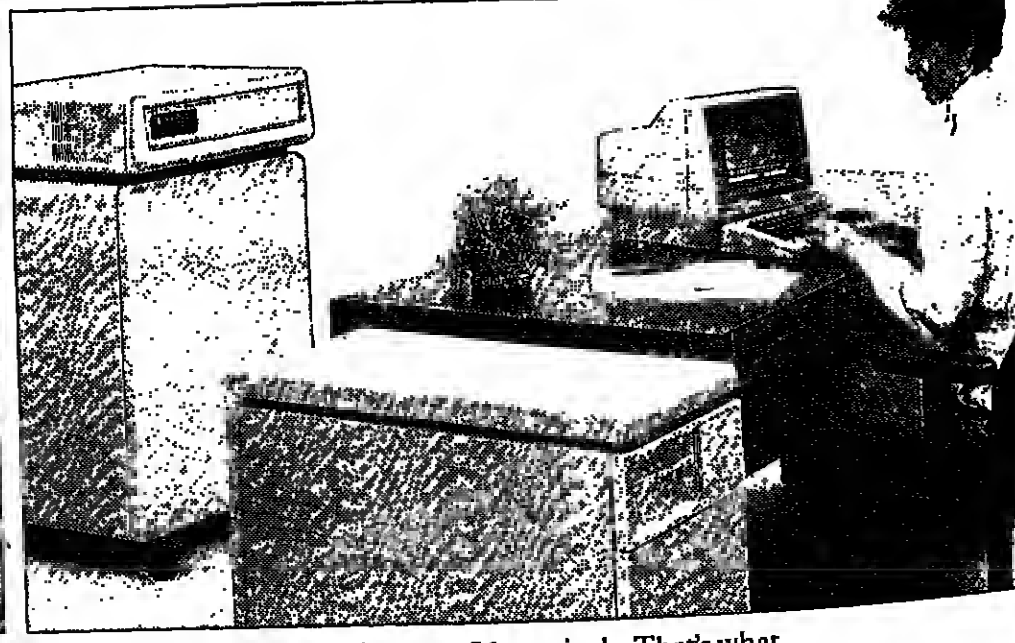
This manager's workstation gives business professionals easy access to the information they need for decision-making, without demanding an understanding of computers.



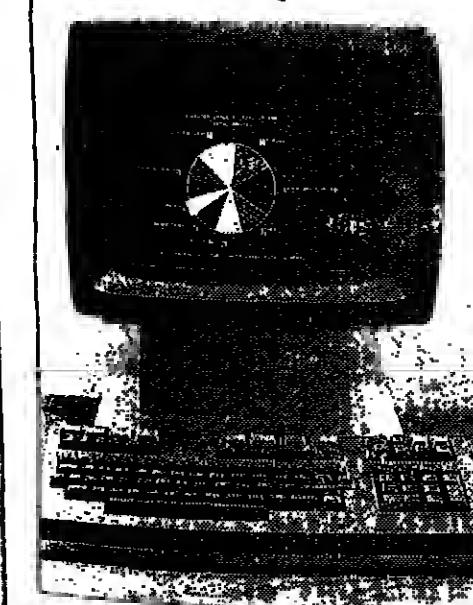
Our new high-performance HP 3000 Series 64 can handle 100 interactive users while processing big batch jobs like the company's payroll.



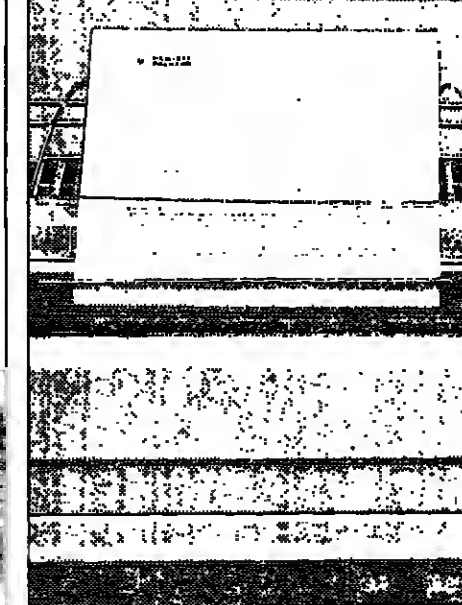
Our personal office computer, the HP 125, is specially designed to handle a manager's individual needs—including word processing, graphics, and data analysis. It communicates with big computers, too.



Economical computing with up to 56 terminals. That's what you get from the new HP 3000 Series 40. Use it as a central processor in a small office or as part of a network.



Graphics created on this low-cost terminal can be plotted on paper or transparencies.



High-quality printing for business correspondence and reports can be generated on this letter-quality printer.



Electronic mail and filing for individual users provides the electronic equivalent for an in-tray, out-tray and filing cabinet.



High-volume printing on this laser printing system virtually eliminates pre-printed forms, letterhead stationery and long queues at the copier.



Data communications can expand The Interactive Office across the country or around the world.



Report generation is simplified by new software tools which let business professionals create reports and summaries in minutes without programming.

Hewlett-Packard announces a major contribution to productivity in the office. It allows you to integrate the four major resources your staff need to do their jobs faster and more effectively—document management, personal computing, support for decision making, and communications.

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If you'd like to see The Interactive Office at work, call your local Hewlett-Packard sales office and we'll arrange a demonstration. You'll see what a difference it can make to your business today, and how it can grow to assure even greater productivity tomorrow.

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PRODUCTS

Security
at 19p
a card

INCREASING cost of software, with the need to protect stored information, have made some form of company security a virtual necessity.

One answer could be the Multishot 84 photo ID card system from Shackman Instruments which provides, says Shackman, laminated, tamper-proof, photo ID cards, at 19p each.

The heart of the system is the Multishot 84 camera which can simultaneously take one, two, three or four identical, ID size, photographs, one for the card, one for personnel, one for the security and one for the new receptionist.

Alternatively if multiple photographs are not needed, four different photographs can be taken with a subsequent saving on costs.

The system uses colour or black and white peel-apart Polaroid film.

The kit comes complete with a laminating machine which is used to bond the photographs and completed ID card into a plastic card.

The kit also includes a tripod



Shackman's ID card camera.

and flash gun (or professional lighting), and a punch to cut the photographs out to exactly the right size, says Shackman.

The end product of the system is a photo ID card which can be carried like a credit card or fitted with a pressure clip and worn on a lapel, pocket or belt.

The Multishot system is easy to use, and Shackman Instruments says it uses the latest assembly techniques.

Shackman Instruments (CW), Mineral Lane, Chesham, Bucks HP5 1NU. Telephone: (0494) 784451.

Printer system
offers savings
to mini users

A REMOTE Line Printer System (RLPS) from Digital Associates - unique because it operates off the printer port instead of the communications port - allows mini-computer users substantial savings in data communications applications by reducing transmission time and enabling the line printer to operate at its full capacity, claims the manufacturer.

The new system can be installed on a broad range of mini-computers without modifications to hardware, software or operating systems.

Unlike a remote printer that operates through the communications port, the RLPS allows a line printer to run at the fully rated speed. For example, a 300 lpm printer will run at the rated speed over a 2400 baud line (dial-up or dedicated) at an average of 50 characters per line; a 600 lpm printer will operate at rated speed over a 4800 baud line (dial-up or dedicated) and a 1,000 lpm printer will

perform at rated speed over a 9600 baud line (dedicated).

Other claimed advantages of the RLPS include:

● The elimination of mini-computer processor degradation that occurs when a line printer is operated through the communications port.

● Because the RLPS compresses data so that only the characters that actually print are transmitted, substantial savings in line use charges are possible. Data compression also results in throughput speeds at least double those of existing RS232C devices in line printer environment.

● The RLPS eliminates the need to pack and ship printed output from a central site CPU to remote locations - and saves on the manpower involved in this operation as well.

Digital Associates Corporation (CW), 1039 East Main Street, Stamford CT 06902. Tel.: (800) 243-9054.



Kenet's Inca 2000.

Eliminating
losses

WITH the Inca 2000 intelligent acoustic coupler system from Kenet Micro Systems any information losses due to noise or interruptions in transmissions are virtually eliminated, say the manufacturers. This is achieved using a Full Duplex System which appends error correcting codes to blocks of data prior to transmission.

All data is transparently checked for errors on receipt and if any are present the originating terminal retransmits all relevant passages automatically, says Kenet.

Kenet Micro Systems (CW), Woodland Industrial Estate, Eden Vale Road, Westbury, Wilt BA13 3QS. Telephone: (0373) 864962.



standard features. And if you need more, we have more than enough options to choose from.

GE IS YOUR BEST CHOICE
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A 32K Text Editor allows you to work off-line to reduce on-line time and communication charges as much as 70%. Transmission speeds are available from 110 to 9600 baud.

General Electric also offers the GE 2030 printer. Identical to the GE 2120 in standard features and available options, the GE 2030 prints at sustained speeds up to 60 cps. Of course, there is one other difference... it also costs less. So if you don't need the speed, selecting the GE 2030 may be your best choice.

MATCH THE PRINTER
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supplier with over a decade of expertise meeting a wide range of data printing needs.

And remember, our roots go back to Thomas Edison. It was in his tradition that in 1969 we introduced the first electronic printer with modern LSI circuitry. Since then, we've continued to advance the quality and reliability of printer technology.

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Stylish, compact, lightweight, quiet and easy-to-use, the energy efficient GE 2120 comes with an outstanding list of

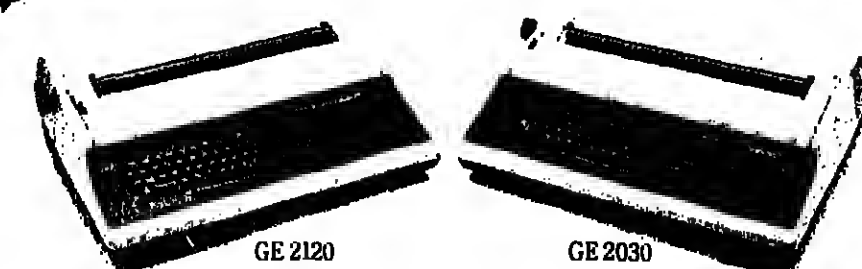
A range of data buffers from 2K to 16K capacity provide the throughput efficiencies you need at high transmission speeds.

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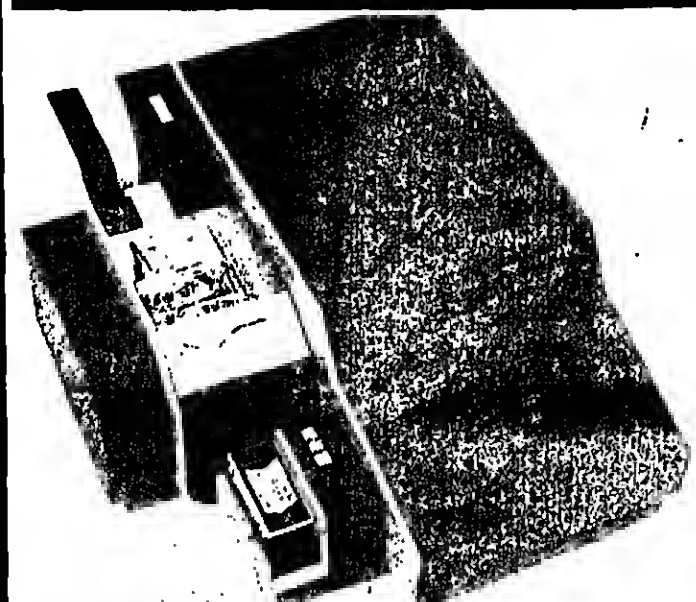
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GENERAL ELECTRIC

The name of General Electric Company, U.S.A. not connected with a British company of a similar name.

NTU2



Data Dynamics' ZIP 585.

Zip go those problems

THE Data Dynamics ZIP 585 intelligent paper tape punch and reader can be used in message switch and other communications applications to solve problems.

The 585 has two ports: one connected to the line is compatible with either five level Baudot or eight level ASCII code conventions, and the second is permanently configured for use with an ASCII terminal (normally a VDU). In this configuration, the ZIP 585 will read and/or punch paper tapes in Baudot or ASCII code, from data derived from either the ASCII terminal, the five or eight level message switch or the paper tape reader.

One application is to monitor the line at night, or at any time when receive terminals are unavailable, to make a security tape record, to make a security tape copy of incoming messages and avoid lost messages should a printer malfunction.

Another important application is 'store tape' communication between an eight level system such as a computer or word processor and a telex machine.

The two ports and the punch all have their own individual buffer stores of 500, 500 and 2,000 characters respectively.

Data Dynamics (CW), Data House, Springfield Road, Hayes, Middx, Telephone: 01-848 9781.

VDU has
25th line

A VISUAL display terminal, the Midas VI, announced by MCS Mini-Computer Systems, is designed for use with the Micos range of Mini-computers. It is available in a choice of white, green or orange screens.

In addition to the standard 1920-character display, formatted as 24 lines by 80 columns, the new model features an optionally visible 25th line. This provides the operator with VDU status information during normal operation, and the engineer with diagnostic error messages during field service maintenance.

The Midas VI offers 32 function keys and 96 displayable UK ASCII characters which are formed by a 6x8 dot matrix in a 7x10 dot



The 25-line Midas VI VDU.

field. Character legibility is enhanced by the terminal's ability to shift dots horizontally in half-dot increments. The detachable keyboard incorporates a separate numeric pad with its own 'enter' key to simplify the high speed entry of numeric information.

Cross Communications (CW), Wilton House, 48 Broadway, Maldenhead, Berkshire SL6 1LU. Telephone: (0628) 70249.

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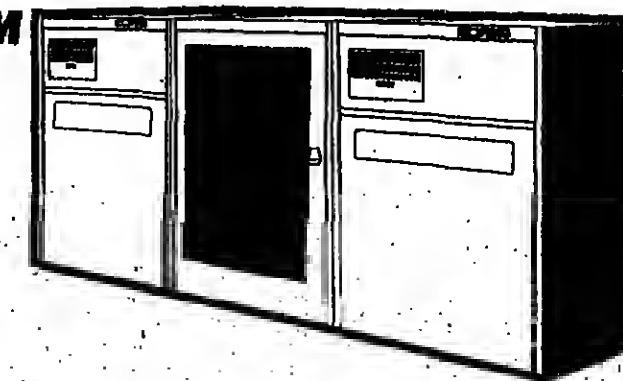
Company: _____

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Computer Technology Ltd., Eaton Road, Hemel Hempstead, Herts. HP2 7LB.
Telephone: (0442) 3272. Telex: 825052

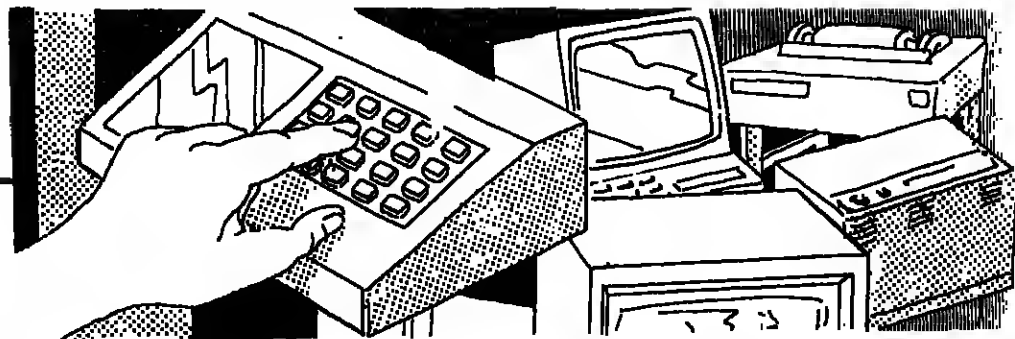
The Computers with MOMENTUM



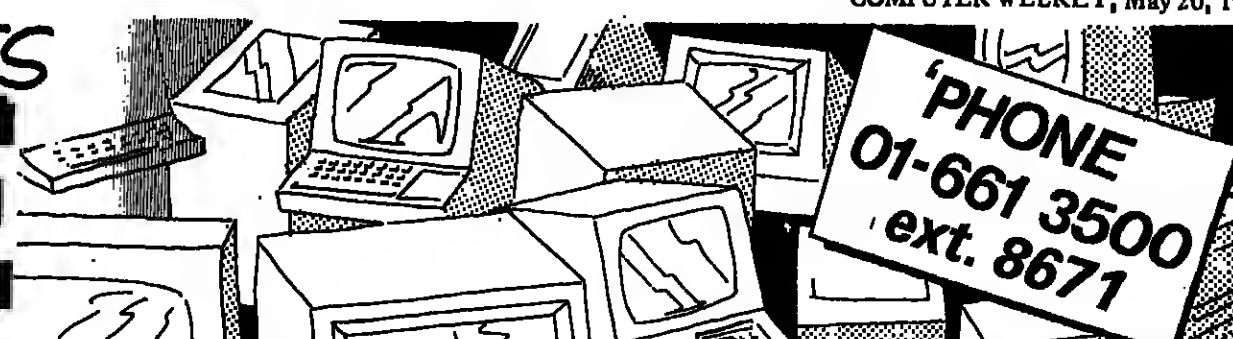
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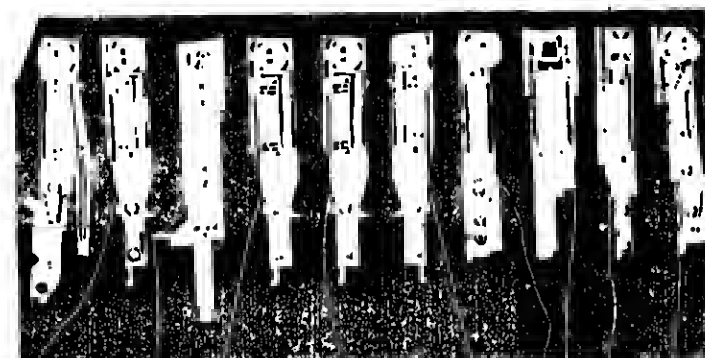
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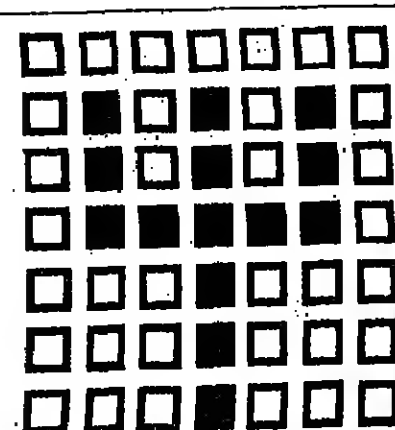
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We look forward to hearing from you

PLESSEY
electronic systems

Information Systems Design

Matlock £8,190-£9,528

Derbyshire County Council need a Senior Asistant
Marketing and Information) to design and imple-
ment new computer based information systems for
the planning department.

It's a challenging position, involving the development
of mathematical/statistical models and techniques -
primarily for demographic work - in liaison with the
County Treasurer's Computer Division.

The successful applicant will be expected to have a
degree or diploma in planning, mathematics or related
subjects and to have had experience in this work,
preferably in a planning department. Experience of
database systems would be an advantage.

The post carries a casual car user allowance and in
appropriate cases the County Council will assist with
any travel expenses and lodging or travelling allow-
ances.

Application forms and job description are available
from the County Planning Officer, County Offices, Mat-
lock, Derbyshire DE4 3AG (Telephone Matlock 3411,
extension 7122). Further detailed information can be
obtained by ringing Wally Gowing on Matlock 3411,
extension 7155.

Completed application forms should be returned to
the County Planning Officer, County Offices, Matlock
by 11 June, 1982.

Derbyshire County Council is an equal opportunity
employer.

PROGRAMMERS! KESTREL WANT MORE...

Asel Data Storage & Management, Specialists in
providing sophisticated storage and cataloguing services
to the oil exploration industry.

Our company is expanding and requires more program-
mers to work in a small friendly Computer Depart-
ment on a CMC Reality Level 4 Mini Computer.

The Computer Department is situated at our Southwark
SE1 8LD, which is near main B.R. and L.T. commuter
routes.

SENIOR PROGRAMMER

8-10k a.a.e.
Approximately 4 years' experience required of which
some must be of using BASIC on Mini Computers.

PROGRAMMER 6-7K

Minimum 1 1/2 years' experience as above.

JUNIOR PROGRAMMER 5-6K

Minimum 6 months' experience as above.

Benefits include L.V.s. and Profit Sharing Scheme.
For the above posts, experience on CMC Reality/Sover-
ign will be a major advantage.

Call Valerie Sheldons on 91 01 422 5002 or
No Agencies please.

ANALYST PROGRAMMER

South Coast Salary up to £9,500

Ricardo are consulting engineers to the world's
major internal combustion engine manufacturers.
An analyst/programmer is urgently required in the
Company's EDP Department which is equipped
with an ICL 2496 running under exec 5s using IDMS
Prolog plus, Stetus, OMAC and LUCRE.

The work, which will be split equally between
analysis and programming, will include the en-
hancement of the existing database system and
involvement with the design and implementation
of new applications.

Applicants may be male or female but should be
not less than 25 with at least 2 years' analyst expe-
rience and 2 years' COBOL programming on data-
base installations. A knowledge of ICL equipment
and operating systems would be desirable but not
essential.

This exciting appointment in a small and friendly
but advanced EDP Department offers a good op-
portunity for gaining further IDMS experience to-
gether with excellent fringe benefits including an
annual bonus, free life assurance and assistance
with relocation where necessary.

Apply in writing or telephone Mr R. Barrow,
Personnel and Administration Manager, Ricardo
Consulting Engineers, Bridge Works, Shoreham-
by-Sea, West Sussex BN4 5FG. Telephone 079
17 6611.

PLYMOUTH POLYTECHNIC

HEAD OF COMPUTER CENTRE

The Centre serves the rapidly growing
Computing needs of the Polytechnic. Ap-
plicants should have appropriate experience
in either education or industry and the abili-
ty to provide leadership to this important
Centre.

Salary: Head of Department Grade V
£13,914-£15,482
(under review)

Application form to be returned by Friday,
June 11th, 1982, can be obtained with
further particulars from the Personnel
Officer.

Logitix

Logitix Recruitment Limited

10 Grenville Place, London SW7 4RW

Telephone 01-373 3063

Jnr. Macro-11 Progs.

E.E.C.: Pkg. to £12k

A number of Macro-11 Programmers, will-
ing to relocate overseas for a minimum of 12
months, are required to join the Italian and
German offices of a leading British Systems
and Software House. Suitable applicants will
have graduated with a minimum of 12 months'
real-time programming on a PDP-11 configu-

ration running under RSX 11/M. Fluency in
Macro 11 is, of course, essential, but candi-
dates able to offer additional skills in Fortran
or Pascal are particularly encouraged to ap-
ply. Applicants' experience should, ideally,
have been gained in a data communications
or process control environment. Ref. L/20/A

Pascal/Unix

South England: Salaries to £10.5k

A Systems and Software supplier, renowned
as one of the U.K.'s leading high technology
companies, is currently seeking PASCAL
Programmers for its software development
group based in Southern England. Suitable
applicants will be graduates in a numerate
discipline with at least one year's industrial
experience in a real-time scientific environ-
ment. It is essential for all positions that you

offer fluency in PASCAL preferably gained
on a mini or micro-computer running under
UNIX. In particular, our client will favour
applicants who have had exposure to PDP-11
or VAX 11/780 machines. For the more
senior positions, you should have some
knowledge of Computer Aided Engineering,
and, obviously, demonstrate management
potential. Ref. L/20/B

RSX-11 Applications & Syst.

Hants/Surrey: Salary to £12k

On behalf of the Consultancy and Software
Services Division of our E.E.C.-based com-
pany we are seeking a number of Systems
Engineers and Applications Programmers,
to recruit for its Research & Development Unit
in a high level language such as
Pascal or Fortran, whilst some involvement
with an Assembler will be considered a use-
ful secondary programming skill. In certain
cases candidates must have actively partici-

pated in the development of a distributed
processing system where either PDP-11/RSX
or VAX/VMS hardware and software is
utilised. Additionally, the company wishes to
recruit for its Research & Development Unit
a number of Programmers who are familiar
with M.O.D. hybrid systems where stringent
programming and design specifications
within a multi-interpreted environment
are employed. Ref. L/20/C

Data Communications

Central London: Salary to £13k

A renowned supplier of Hardware and Soft-
ware Systems is seeking a number of Data
Communications and Telecommunications
Designers/Engineers for its Central London
office. Successful candidates should
have at least one year's experience and be
fully familiar with recent product de-
velopment in the areas of Local/Remote
Area Networks, Word Processors and Office
Automation Systems. Of special interest will
be those candidates who have a profound
knowledge of data communications, proto-

colling techniques, ie X-25, HDLC/SDLC.
Candidates who have had recent experience
of software programming and systems design
in a high level or block structured language
will generally receive a salary premium.
Good personal presentation skills are of
paramount importance since you will be ex-
pected to liaise with both technical manage-
ment and non-technical personnel. All posi-
tions will entail a degree of travel within the
Home Counties region and occasionally over-
seas. Ref. L/20/D

Graphics/CAD

Home Counties: Salaries to £11k

A market leader specialising in the produc-
tion of computer systems design applica-
tions is currently seeking additional Systems
Programmers and Applications Support Con-
sultants. Suitable applicants will be numerate
Systems would be of distinct advantage. All
graduates, preferably with a degree in either
Mechanical or Civil Engineering. Subse-
quent industrial experience should include at
least one year's Fortran or Assembler pro-

gramming experience in either a technical or
scientific environment. In particular, can-
didates should possess a thorough knowledge of
Finite Element Modelling, An-
alytical Control or Computerised Drafting
Systems would be of distinct advantage. All
positions will involve a degree of national
and international travel and, in certain cir-
cumstances, a company car will be provided.
Ref. L/20/E

Management Consultants

Central London: Salaries to £18k + Car

A U.S.-owned international Consultancy is
currently seeking additional Management
Consultants for its Central London office.
Suitable applicants will be graduates
who have at least five years' experience in
experience and have probably progressed
into a management role. You should offer a
wide-ranging knowledge of hardware and
business applications, but of paramount im-
portance will be the ability to identify prob-
lems from both a business and technical
point-of-view and to communicate with per-
sonnel at all levels. In particular, our client
has a stated preference for applicants who
have had exposure to IBM hardware and are
familiar with structured design techniques,
database management systems or network-
ing. The above-average salaries offered re-
flect the importance of employing Consul-
tants of a high standard to maintain the
Company's excellent professional reputa-
tion. Ref. L/20/F

Comms. S/W Designers

South Wales: Salaries to £11k

A world-leading supplier of telecommuni-
cations equipment has a number of require-
ments for Communication Software De-
signers to join its Research and
Development facilities. All candidates must
possess at least a degree in Computing
Science or Electrical/Electronic Engineering
and have had two years, or more, in an in-
dustrial environment. Past responsibility for

hardware implementation, as well as soft-
ware design of low level protocols up to, and
including, Transport Service will be
favoured. Applicants should, preferably,
have hands-on experience with a leading
MDS and be fluent in an Assembler and one
or more high-level block structured lan-
guages. Ref. L/20/G

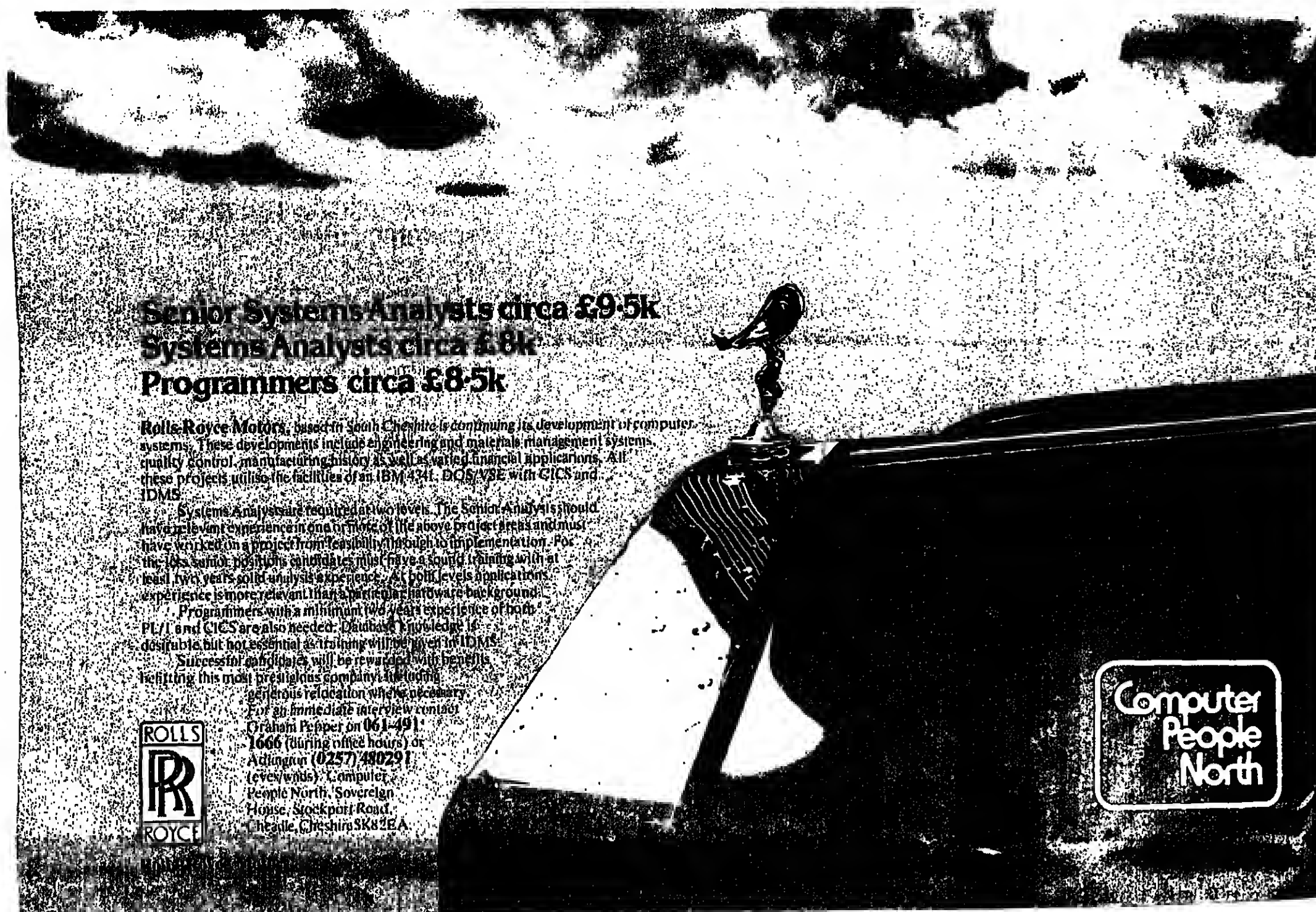
Firmware Programmers

Cambridgeshire: Salary to £10k

A hardware manufacturer and software
supplier, with a rapidly expanding customer
base, has a number of vacancies in its Re-
search and Development Department. Ap-
plicants are invited from those with exper-
ience in the design and production of single

or multi-board computers, interface design
and microcode assembly programming. All
candidates must be graduates and thrive on
working in a loosely structured but dedicated
environment where technical expertise is
highly rewarded. Ref. L/20/H

0276 64252



Senior Systems Analysts circa £9.5k
Systems Analysts circa £8k
Programmers circa £8.5k

Rolls-Royce Motors, based in South Cheshire, is continuing its development of computer systems. These developments include engineering and materials management systems, quality control, manufacturing history as well as varied financial applications. All these projects utilise the facilities of an IBM 4341, DOS/VSE with CICS and JIMS.

Systems Analysts are required at two levels. The Senior Analysts should have relevant experience in one or more of the above project areas and must have worked on a project from feasibility through to implementation. For this job senior positions candidates must have a sound training with at least two years solid analysis experience. At both levels applications experience is more relevant than a specific hardware background.

Programmers with a minimum two years experience of both PL/I and CICS are also needed. Database knowledge is desirable but not essential as training will be given in JIMS. Successful candidates will be rewarded with benefits including this most prestigious company, including generous relocation where necessary.

For an immediate interview contact
 Graham Pepper on 061-491 1666 (during office hours) or
 Adlington (0257) 480291 (evening) Computer People North, Sovereign House, Stockport Road, Cheshire SK8 2EA.

Computer People North

myriad

Internal Consultancy

PDP 11/70s

BASIC +

RSTS/E

The data processing group of a multi-national, British organisation also functions as a consultancy for the UK subsidiaries and two additional staff are now required to strengthen the team. The Company is well-established with interests in many different countries contributing to an annual turnover of approximately £250 million.

Programmer

Bletchley/City

c. £9,000

To be primarily responsible for a major subsidiary, this person will require strong interpersonal skills as they will act as a link between London and the users in Bletchley. Applicants should have a sound knowledge of BASIC + or BASIC+2 and be able to operate effectively under minimum supervision.

Both of these positions involve a large proportion of development projects using on-line software and DP staff are encouraged to expand their career potential and promote their services within the organisation. Employee benefits include a pension scheme with free life assurance, subsidised meals, an interest-free season ticket loan and two reviews per year.

For further information regarding these opportunities, contact our London office (01-353 0981) quoting reference S1/1305.

Myriad Appointments Limited

30 Fleet Street, London EC4Y 1AA Telephone: 01-353 0981 24 hours
 50a London Street, Reading, Berkshire RG1 4SQ Telephone: Reading (0734) 565602 24 hours

Analyst/Programmer

The City

c. £10,000 + Car

In addition to 2-3 years' sound commercial experience in a RSTS/E environment, candidates should demonstrate the ability to define and work within disciplined timescales. The successful applicant will be responsible for the development of a wide range of commercial applications for users in the City and other offices around London.

FRANKFURT

An International Bank based in Germany is seeking the following staff:

MANAGER, SYSTEMS & PROGRAMMING

DM67,000 to DM80,000

- ★ Minimum 3 years in a supervisory capacity with exposure to IBM mainframe running under DOS/VSE, COBOL, RPG, ASSEMBLER.
- ★ Degree in Computer Science desirable.

PROGRAMMERS

DM44,000 to DM56,000

- ★ Ideally to commence in mid-June although a later start possible.
 - ★ Training given in U.S.A. for 3 months.
 - ★ 3 years' COBOL in IBM Mainframe environment.
 - ★ Knowledge of Assembler, DOS/VSE and RPG II desirable.
 - Knowledge of German is not essential for either of these positions.
- TIMESCALE:** Applications in by May 24.
PRE-SCREENING: Week commencing May 24.
FINAL INTERVIEWS BY FRANKFURT REPRESENTATIVES June 3-4.

TELEPHONE: SUE ASHBY and ANNE BETTS 01-436 6775
 0844 63531 (evenings)

Computer Personnel International
 24-32 Southampton Street, London WC2R 3JF

Analysts and programmers

We're looking for a few choice people.

At Informatics we offer a career not just a contract. Sure you can join us in the USA for twelve to eighteen months and return to the UK and work elsewhere. However, if you wish, we offer guaranteed positions in the UK, Ireland or Europe at the end of your initial USA assignment. In addition, we offer continuing USA assignments with the possibility of permanent relocation to the USA for qualified applicants. IBM experience is NOT a requirement for these positions but we do guarantee both IBM training and IBM projects to all who join us. Our interview schedule is as follows:

London
 Africa House, 64-78 Kingsway
 Wednesday, June 16, 1982

Dublin
 New Juys Hotel
 Thursday, June 17, 1982

We offer salaries of up to \$40,000 per annum with generous relocation allowances for you and your family. In addition, we have generous company subsidised life, health and dental insurance plans for you and your family. To arrange for an expense paid interview in either of the cities listed above, please rush your resume or call Ms. Angela Nanni at (01) 405-8546

Informatics Inc.
 Africa House
 64-78 Kingsway
 London WC2R 3JF
 01-405 8546

CONTRACTS

Middle East/UK.

Good rates • end bonus • five-day week • regular return flights • free accommodation • medical cover

More Contract Personnel are required for the UK and Saudi Arabia. In addition we have vacancies for people looking for permanent positions shown below. All current Contract positions are for people with IBM machine experience.

SAUDI ARABIA

PL/I Programmers and Analyst Programmers
 MARK IV Programmers • Business Analysts
 FORTRAN Programmers • Systems Analysts
 System Programmers • Data Base Analysts
 Senior Operations & TP Staff

UK

Business Analysts - London
 System Analysts - London
 Analyst/Programmers - London & Berkshire - PL/I

PERMANENT SAUDI ARABIA

Vacancies exist for development staff with experience of IBM biased turnkey projects.

PERMANENT UK & EUROPE

Customer Engineers with IBM experience for various locations. System Engineering vacancies also exist.
 Management Consultancy for London.

Contact Mike Mead or Pat Lowford for more information and on application form now.

IMERS
 International and Middle East
 Recruitment Specialists

IMERS Limited, Princess Caroline House,
 1 High Street, Southend-on-Sea, Essex SS1 1JE.
 Tel: 0702 333516 (24 hour answering service).
 (0572)

Real Time Programmers

High Wycombe

Mini-Computers and μ proc.
£7,000-£10,000

Instron is one of the most successful and advanced manufacturers of materials testing equipment in the world. Our products are widely used in research, development and quality control and have won many awards, including Queen's Awards for Export and Technological Achievement.

Please ring the Personnel Department, High Wycombe (0494) 33333 or write to the Personnel Manager, Instron Limited, Coronation Road, High Wycombe, Bucks HP12 3SY.

Men or women may apply



Brussels London

Octopus

SOFTWARE ENGINEER UP TO £15,000
 DEC VAX/MICROS

ASSEMBLER/FORTRAN/REAL-TIME
 A Senior Management position with plenty of opportunity for personal contribution with medium sized Software House in East Berkshire.

ANALYST PROGRAMMER £6-£11,000
 IBM/OS/VS3000 COBOL

Wide range of applications with a successful, energetic and exciting company of computer manufacturers.

All applications with C.V. to Brian Roberts
OCTOPUS COMPUTER ASSOCIATES LTD.
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TEL 01-886 0133 (24 hr. Ans)
 INTERNATIONAL PERSONNEL CONSULTANTS
 FOR PERMANENT AND CONTRACT STAFF

CUSTOMER SUPPORT EXECUTIVES

A major manufacturer of computer systems ranging from single-terminal small business systems to multi-terminal computer configurations needs to appoint Customer Support Executives.

The company has embarked on creating a new corporate identity which involves a revised sales and support strategy with many new exciting products available (and more in the pipeline). The Customer Support Executives will play a leading role in assisting the sales force with new prospects and existing customers within the South-West (commencing at Chichester and beyond) of England. Therefore, we would like to hear from you either if you have worked in a similar environment or feel you have the required personality and ability together with business systems and programming experience to take on such a demanding challenge.

Interested? Then contact Dennis G. Hall

D.G.H.

Management & Recruitment
 Consultants
 Suite 2, Albion Buildings
 Bank Hill, London, EC1
 Tel: 0772 6644 (10 lines)
 0772 2667 (evening and weekend)

Johnnie Kito

APL

c.10k to 13k Central London

BUPA, leaders in the fast growing field of health insurance, are rapidly expanding their use of APL based systems. The actuarial department, which is a major user department, is undertaking a continuing programme of major APL applications. These are being implemented using a powerful in-house mainframe installation linked to colour VDU's.

The initial phase of the planned APL systems was implemented using an APL software house. We are now building up our own in-house APL team to carry on the rapid developments required, and wish to recruit two further APL specialists. The ideal candidates will be graduates with at least 2 years' good solid APL programming experience.

The starting salary is negotiable, depending on experience, and will not be an obstacle for the right candidate. The benefit package will include mortgage subsidy, season ticket loan, pension scheme, free BUPA and subsidised staff restaurant.

If you'd like to talk to someone capable of discussing the technicalities then you should ring Phil Chastney or Michael Moliver. Alternatively you can write to, or ring the Personnel Department for an initial meeting where we can discuss the longer term possibilities.

Personnel Department,
BUPA, Provident House,
Essex Street, London WC2R 3AX.
Tel: 01-353 9451.

BUPA

ITALY

Programmer required for interesting contract assignment near Rome. Extensive recent IBM/ASSEMBLER/CL experience essential. Excellent terms and conditions, send CV or telephone. ARLATIVE LTD, LITTLE MEAD, KENN CLEVELAND, BRISTOL BS21 6TS. Telephone Cleveland (0272) 877880.

nihe
limerick

Planned as Ireland's first technological university, The NIHE, Limerick, Ireland has already gained widespread recognition for its contribution to the country's industrial development. Construction has now commenced on a new 17,000sqm complex, which will double the range of laboratories and specialist business facilities, there are vacancies for:

COLLEGE OF BUSINESS

COMPUTER SYSTEMS

LECTURERS/ASSISTANT LECTURERS

Due to the growth of programme offerings in the area of computer systems, there are now a number of vacancies for staff whose expertise lies in the following areas:

- COMPUTER PROGRAMMING/PROGRAMME METHODOLOGY
- OPERATING SYSTEMS
- COMPILERS
- COMPUTER GRAPHICS
- SYSTEMS ANALYSIS AND DESIGN/DATABASE
- MANAGEMENT SYSTEMS
- DATA COMMUNICATIONS/DISTRIBUTED
- COMPUTING NETWORKS
- MATERIAL REQUIREMENTS PLANNING
- COMPUTER ASSISTED INSTRUCTION

COLLEGE OF ENGINEERING & SCIENCE

ELECTRONIC ENGINEERING

LECTURER/ASSISTANT LECTURER

Applicants should have significant experience of analogue and digital circuit design and implementation. Experience in industrial applications including transducers, instrumentation, signal conditioning, data transmission, modern power electronics and electronic production techniques is particularly desirable.

COMPUTER ENGINEERING

LECTURER/ASSISTANT LECTURER

Applicants should have experience and expertise in one or more of the following: operating systems, systems software, high level language compilers and interpreters, computer hardware, interface design, micro-computer communications, networks, minicomputer and microcomputer systems. A successful candidate would be a decided asset.

SALARY SCALES:

SENIOR LECTURER: IRE 13,828-IRE 18,705 p.a.
LECTURER: IRE 11,865-IRE 15,561 p.a.
ASSISTANT LECTURER: IRE 9,796-IRE 11,367 p.a.

Application material available from The Personnel Office, The National Institute for Higher Education, Limerick, Ireland to be completed and returned by Friday, 18 June, 1982.

English subsidiary of Multi-National Company in the Finance Sector requires:

PROGRAMMER and ANALYST/PROGRAMMER for IBM System 38

Sound knowledge of RPG Programming coupled with on-line experience. Working on a wide range of development projects. Fully utilising the facilities offered by System 38.

Based in Winchester with a salary dependent on experience.

Please write with a brief outline of your experience to:

Paul Newman
Imex Ltd
Herman House
Andover Road
Winchester
Hants. SO23 7BS

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Circa £10,000 p.e. plus car

Contact a professional Hire and Search service for the best introductions.

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Software Designer

The Diamond Trading Company, an associate of the De Beers Group, has built a new research centre in Maidenhead to develop and build equipment for use within the industry.

The minicomputer section is responsible for providing the computing facility within this research centre. It has a VAX 11/780 and runs a wide variety of mathematical and engineering software.

There is currently a vacancy for a software designer to work on minicomputer and microprocessor based designs and to deputise for the head of the section.

The department is active in a variety of fields including research, electronics, computing and precision engineering, giving the successful applicant the opportunity to display his or her skills in solving a wide variety of problems.

Applicants should hold a suitable degree or other qualification, and have at least 3 years' experience working with computer-based systems. A thorough grounding in mathematics would be a distinct advantage as would experience of DEC or INTEL products.

The Department is based in Maidenhead. The successful applicant would be expected to travel to the Company's head office in London frequently and to overseas locations occasionally. An excellent benefits package is offered including a non-contributory pension scheme and staff restaurant.

Please write with full details to M. H. Boorman, Personnel Manager, 17 Charterhouse Street, London EC1N 6RA.

an associate of the De Beers Group

PROCESS CONTROL

South Coast

to £5,500 neg.

Our client, a leading designer of custom built process control systems is currently undergoing a major expansion programme. To ensure the success of this programme, our client is seeking to recruit a further high calibre

APPLICATIONS PROGRAMMER

to develop software packages for a wide range of control applications.

This is a challenging position likely to appeal to graduates with a minimum of 2 years' experience of process control applications software looking for an opportunity to work in a stimulating environment where their innovative talents will influence the continued growth of the company.

Applicants with a working knowledge of APL will be of extreme interest, but training is available in this very versatile language.

If you would like to discuss your prospects and the excellent negotiable package, including full relocation expenses to this idyllic location then telephone Tony Johns or Phil Dungey on:

0293 543431 (9 a.m. - 6 p.m.)
(out of hours answering service)

or write, enclosing C.V. to:

ATA ENGINEERING RECRUITMENT
34 The Boulevard
Crawley, Sussex

LONDON BOROUGH OF SUTTON
CARSHALTON COLLEGE OF
FURTHER EDUCATION
NIGHTINGALE ROAD
CARSHALTON
SURREY SM6 2EJ
Tel: (01) 847 0021/7

Principal: L. P. Lawrence
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LECTURERS I

Required for 1st SEPTEMBER, 1982

To teach:

COMPUTER STUDIES AND

DATA PROCESSING

SALARY: SURREY, plus £400

London Allowance

Applicants should have a minimum of 3 years' experience in the field of computer studies and data processing. Applicants should also have a minimum of 3 years' experience in the field of computer studies and data processing.

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Applicants should also have a minimum of 3 years' experience in the field of computer studies and data processing.

EAST ANGLIAN REGIONAL HEALTH AUTHORITY Computer Branch

Applications are invited for the following posts which are based at Addenbrooke's Hospital, Cambridge.
Sitting salary: Depending on previous experience, could be up to £7,554 per annum.

Systems Designer

For our patient administration team offering a challenging position for an experienced Systems Designer to work on the development of patient administration systems for hospital use within East Anglia. The systems are being developed for minicomputer equipment.

Designer/Programmer

For our microcomputing team for the development of microcomputer applications and software and to provide advice and guidance to users on all aspects of microcomputing. Applicants should be educated to degree level and have two to three years' systems and programming experience.

Application form, job description and further details from the Regional Personnel Officer, East Anglian RHA, Union Lane, Cambridge CB4 1RF. (Tel. Cambridge 6212, ext. 325).

Closing date: June 4th, 1982.

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SURREY BASED

9K to 14K + BENEFITS

Our client is a Euro/UK Software House offering consultants and those wishing to progress into consultancy a wide range of opportunities. You will enjoy tremendous variety and lots of personal contact. Generous salary levels (more if qualified), L.V.A., etc.

If you are ambitious, flexible, and a unique training program will develop your experience in one of these fields:

IBM ME29

IBM SYSTEM 34 or 38 RPG II or III

IBM COBOL CICS DLI

HP 3000

Ring us for tomorrow's jobs today! Ref. SA 44

AB EXECUTIVE (KINGSTON) LIMITED

01-549 6441

SINGAPORE

Centre of Computer Studies Ngee Ann Polytechnic

The Centre is being developed to help meet the rapidly increasing demand for skilled computer personnel in Singapore. It will be charged with the responsibility to train up to 200 students per year to the approximate level of the BEC/TEC HND programme in Computer Studies. ICL and the British Council are working with the Government of Singapore to develop this prestigious Centre, which will be equipped with the latest state-of-the-art ICS 2860 mainframe computer. In the first year the following posts will be required for September 1 1982 or as soon as possible thereafter.

Director

Duties: Responsible for managing the Centre; in particular co-ordination of the activities of all staff, overall responsibility for the development of curriculum and teaching materials, advice on staff selection and training and maintaining close liaison with major employers of computer personnel.

Qualifications: Candidates should have held a senior post (probably Head of Department) in a British educational institution. They should have particular experience relating to the development of BEC/TEC HND courses in Computer Studies. Employment within, or experience of close liaison, with major computer users would be a definite asset.

Senior Associates

Two proposed that three sections be developed within the Centre: Programming, Computer Architecture and Information Systems. Three Heads of Section are required:

Duties: Responsible for the management of all staff and resources within their section; curriculum development and materials production within their specialist area; advice and supervise recruitment and training of staff and undertake some teaching.

Qualifications: Candidates must have a relevant honours degree and have held a senior post in a British educational institution and have proven ability in the development of HND courses in Computer Studies. Additional skills in areas other than their particular specialisation are highly desirable, e.g. database design, project control, etc. Commercial, industrial or government experience desirable.

Associates

(Various Disciplines) (3 posts)

Duties: Responsible for curriculum development and materials production for the programming, computer architecture, information system of database courses (in conjunction with the Head of Section); to undertake teaching and tutorials, liaison with local employers.

Qualifications: Candidates must have several years' teaching experience in a British educational institution and should have been involved in course development for HND Computer Studies. Candidates who have the relevant experience and have proven ability in more than one area of specialisation will have an advantage.

Salary and Benefits: The salary, which will be taxable in Singapore, will be commensurate with qualifications and experience as follows:

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Experience/Qualifications:

Educated to H.N.D. standard or equivalent with substantial relevant experience. A knowledge of I.B.M. equipment, its operating systems and assembler programming language is essential.

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(Salary: £7371-£7875
Salary Award due July 1, 1982)

Duties:

The duties of the post are to design, write and test computer programmes, taking due consideration of the needs of the user. The postholder will also be required to assist in the instruction of staff of user departments in the operation of the programmes.

Experience/Qualifications:

H.N.C./H.N.D. in Computer Studies and at least two years' experience in Computer Programming. A knowledge of I.B.M. equipment, its operating systems and assembler programming language is essential. Application forms and job descriptions for the above posts are available from the Personnel Unit (Tel. Telford 50505) Ext. 4811 and should be returned to the Personnel Manager, Malpas House, Telford, Shropshire TF3 4K, not later than Monday, May 24th, 1982.

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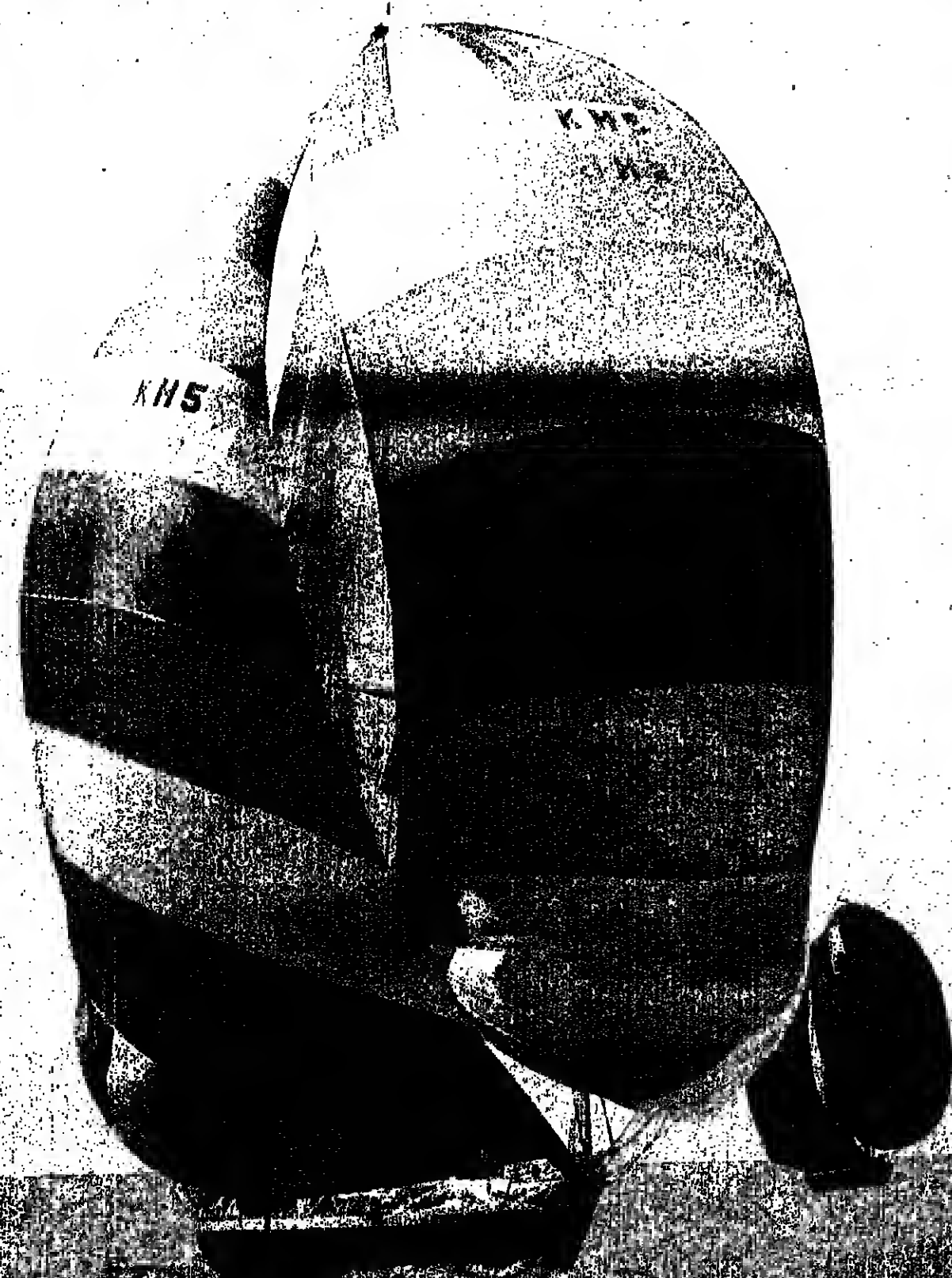
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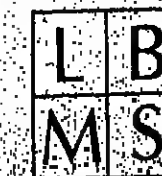
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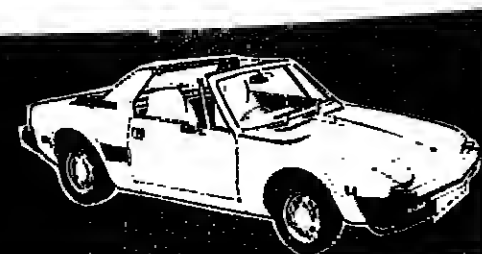
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We don't employ our systems programmers solely to install and maintain our system software - we believe in using their skills to develop additional software tools to aid our programmers, systems designers and operations staff.

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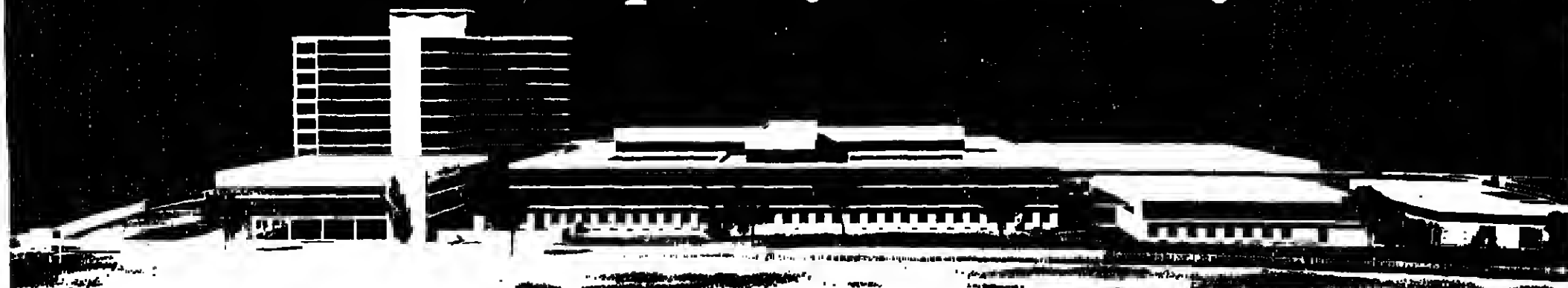
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Jeffrey Little

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Computer companies pitch their power on the quality of Mersey



Following the opening of the Giro Centre in Bootle, the Merseyside area was tipped to become Britain's computer capital.

by Chris Youett
 THE Merseyside area has one of the largest concentrations of DP power in the UK and at one time was tipped to be the country's computing capital, following the opening of the National Giro Centre in Bootle.

Many of its industries are manual or craft based and this is reflected in the type of applications currently being run. The insurance market also makes a major impact on the Merseyside DP scene.

Up the M6 at Warrington, famous for its vodka and Rugby League team, is the site of Dan General's European engineering training centre.

The 40,000 square-foot centre runs courses lasting from three days to five weeks and handles service engineers who have no knowledge of the computer industry, through to experienced staff who have just joined the firm.

In the two years it has been open, the centre has run 5,300 students weeks of training in hardware and diagnostic software. Samples of every type of kit Data General currently maintains are also to be found at the centre.

Manager Colin Cowie said: "We moved to Warrington because of its accessibility by rail, road and air and because the UK is the largest of our European subsidiaries. So it makes sense to ensure the most people have the least distance to travel."

"The facilities offered by Warrington Development Corporation were also important. They are a very positive outfit," Cowie added.

One of the trendier ideas of the 1960s was the New Town concept of moving people and their jobs out of inner city slums to green-field housing and industrial developments.

In some cases, this has seriously backfired and Skelmersdale - the New Town for Liverpool - now has nearly 25% unemployment. However, the Co-op Bank was also

faced with having to move out of the big cities if it wanted to build a large installation to handle all its UK and international business.

The installation, formerly opened by Denis Healey in 1980, is the largest employer of clerical staff in the area and has created 600 new jobs.

The main objective of the installation is to give more local autonomy to branches by centralising repetitive work and thus freeing bank staff to deal with their customers.

In addition to rooms full of OCR readers, it has two IBM 3031s, a 4341 for consumer credit and a System 38 to handle Handycard accounts. This work was formerly done by Barclays.

The centre also produces most of the letters which the branches send out to their customers. There are nearly 40 standard letters which are personalised by the clerks there before being printed. The computers also handle statements, cheque books,

opening of accounts, standing orders, customer records, cheque guarantee cards and cheque clearing.

The centre is examining the use of viewdata and EFTS in the banking world. The viewdata pilot scheme is initially looking at ways of giving branches larger volumes of data which do not need to be sent immediately - for example, management circulars and detailed credit status reports.

Although nationally EFTS is still at the talking stage, the Co-op is looking at online credit authorisation as a first step towards eliminating many of the cheques in circulation. Obviously, the retailers have got to agree on a standard first.

In the heart of Merseyside at the Port of Liverpool building is software house Fraser Williams. This company was set up in 1969 with some capital coming from the insurance industry. It has averaged 30% growth a year since formation and was the subject of a manage-

ment buy-out.

Although it is an OEM for nine manufacturers - including DEC, Data General, Hewlett-Packard and Texas Instruments - the company is unusual in that it has a policy not to make any profit on the hardware sales.

This is because the house believes it is more important to sell decent software to the end-user, it says.

An application which one user says is largely responsible for keeping him in business is an integrated garment industry system. The user, Sutcliffe Melbourne of Hebburn Bridge, has 'IT' kit running under the DX10 operating system. The whole package costs over £100,000, but the company estimates that it has reduced its stocks by more than that amount in the first year.

Geest developed the original ledgers and the software took 18 months to develop. It covers productivity parameters, order processing, material control and

purchase.

Fraser Williams also markets a package to assist the development of drugs and chemicals for the pharmaceutical and agricultural industries. It is working at 30 sites in the US, Japan and Western Europe.

In the insurance market is software house BCT of Garston, which has introduced a re-insurance package aimed at the takers of insurance on property and consequential losses.

The screen-based menu driven package handles statutory returns, underwriting, reporting and agents/brokers accounts.

BCT also does packages for steel plate stockholders which build up a database of stock to try and reduce off-cuts; for Christmas hamper firms to control buying requirements, commission paid to agents, structure of orders, breakdown of advert responses and sales; and for warehouse which automatically produce invoices for rental space.

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Quality of Management - 10

Even salesmen try to swing the lead!

LAST week I wrote about salespeople with business interests outside their main employment. Moonlighting, external commissions, using their husband or wife as a business front, and setting up their own businesses in parallel with current employment. The implications were obvious in terms of lowering sales achievement and equally clear as far as counteraction is concerned - it must not be allowed.

This week I will introduce a close relative of the above: The lead-swinger. For those light on maritime history I might explain that in hygienic days when ships attempted to navigate shallow waters they used a lead-weight on the end of a line to test for the depth of water. This was a simple task requiring little physical effort on the part of the operator, the weight being swung out in front of the ship and not taken of the appropriate mark when the line was in a vertical position.

As the navigation of shallow water was a fairly hazardous business, all able-bodied seamen were obliged to stand at their station in anticipation of emergency action and, therefore, the job of "swinging the lead" was usually given to someone who was only fit for light work.

This became the well-established province of the scrounger and the work-shy and consequently anyone who complained of feeling unwell with no apparent symptoms would be accused of continuing to secure the job of checking for depth - hence, "swinging the lead".

Human nature never changes and the proportion of the population who would prefer to swing the lead as opposed to do a full day's work for a full day's pay is no less now than it was in the days of sail. Similarly, salespeople have no lesser capacity for work avoidance than those in other occupations.

In most sales teams there is usually at least one individual who is not pulling his weight (another nautical term), or at least will coast along if he is allowed to do so. This is not usually discovered during some blatant act of neglect or laziness; it is more an accumulation of apparently trivial indications creating a feeling that things are not as they should be. The difficulty lies in being able to put one's finger on what the problem really is, or deciding whether there actually is a problem to tackle.

I recall a salesman who worked for me when I ran the sales operation of a large international service bureau. He was an intelligent and articulate man who had gained a lot of selling experience before he joined our company - so much so that he became a kind of unappointed "guru" to some of the younger and more impressionable members of the sales team.

It was this status that brought the matter to a head. The existence of an unappointed guru is a danger for the junior salesmen did not worry me at all - I

strongly believe senior salespeople should be encouraged to assist their junior colleagues wherever possible. My real concern was that I didn't feel comfortable with the guy for reasons I couldn't explain. Because of these doubts I was unhappy about his influence on some of his more vulnerable colleagues. Consequently, I decided to review his past activities and to keep a close eye on him. Previous areas of suspicion all appeared to be trivial.

His company car just happened to consistently do significantly less mileage per gallon than everyone else with identical models. He was the one who always managed to lose his expense receipts. Whenever I tried to make urgent contact with him via his wife he regularly just happened to "pop into the house" at the time I called.

He was ahead of sales quota but his prospect list was slow in developing and he had been endowed with a couple of "bluebirds". After some poking around I got a much clearer picture of his approach to the job. Every morning he took his kids to school and most afternoons he collected them again. He wasn't a golfer, but was still disinclined to work on Friday afternoons.

Yet his colleagues described a number and variety of client visits that could only have been achieved by someone working a consistent ten-hour day. Of course I sacked him (there was no point in threats or edicts). After the event I wondered how I could have been such a fool to allow my dauntless altruism to be exploited in such a way and vowed to learn from the experience. However, the real concern that all this brought to my mind was the possibility that I might have been wrong.

There is no factor more likely to degrade the relationship between a manager and a subordinate than the suspicion that the latter is cheating and breaking promises. After all, that's what work avoidance really is.

This is a situation that must not be allowed to develop. Right or wrong, everything has to be brought out into the open, otherwise this emotional cancer will grow out of all proportion with an outcome that must be to the detriment of everyone concerned.

Alan Williams

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